

SOAP

and SANITARY CHEMICALS



In this Issue...

Dry cleaning detergents
in the commercial plant

* * *

Silicone auto polishes,
their composition and use

* * *

Stability and solubility
of aerosol insecticides

* * *

Antiseptic soaps — are
they efficient germicides?

* * *

*Cover photo: Al Candy, Jr.,
1950-51 president, National
Sanitary Supply Assn. Mr.
Candy is president of
Candy & Co., Chicago.*

JULY 1950

We proudly announce the availability of

SOLPROTEX

A new concept in sunburn protection.

A special composition, chemical sunscreen particularly evaluated chemically and spectroscopically.

Biologically, pharmacologically, and clinically tested to assure safety and efficiency.

CHEMICALLY EVALUATED

Developed chemically by a special research team under the direction of Professor Dr. L. Ruzicka, Nobel Prize Winner, 1939. They produced a new chemical combination, a new concept in sunscreens.

PHYSICALLY SURE

Spectrophotometric studies evaluated Solprotex as the most nearly ideal sunscreen. Rechecked solar radiation studies proved that Solprotex was effective under normal conditions of use. Insoluble in water, it resists perspiration. Solprotex screens out burning rays and permits healthy tanning rays to pass.

PHARMACOLOGICALLY SAFE

The safety of Solprotex was determined by the latest biometric evaluation. These tests were conducted both in America and in Europe under most capable pharmacologists. This assures a wide margin of safety under normal conditions of use.

PHYSIOLOGICALLY PROVEN

Animal experiments in the widest range were used to determine the physiologic harmlessness of Solprotex. Pathological examination of the

tissue and organs of the animals tested showed no pathological significances.

CLINICALLY TESTED

Competent dermatologists at a well-known university clinic tested and examined several hundred patients to assure safety in human use.

SUN TRIED

Solprotex has been tested on various human skin types at the sea, beach, lake, pools, and in the snow to determine both its ease of application and protection against sunburn.

COSMETICALLY ACCEPTABLE

Only a 2½% concentration of Solprotex is required. Solprotex lends itself to wide cosmetic formulations such as oils, creams, lotions, and alcoholic preparations. Formulation suggestions are available. These formulae have been tested for physiological safety.

PERFUME TESTED

Solprotex has no unpleasant odor to cover, and therefore, permits a wide choice of acceptably tested perfumes in a complete price range. Even delicate, light odors perfume Solprotex satisfactorily in very low concentration.

NOTE:

May we send you copies of research papers covering these tests? For further information regarding Solprotex, or working samples, write:

FIRMENICH & CIE.
SUCCESSIONS DE
CHUIT, NAEF & CIE.
GENÈVE SUISSE

FIRMENICH & CO.
250 WEST 18th STREET, NEW YORK 11, N. Y.

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GENÈVE, SWITZERLAND ... PARIS, FRANCE

ONLY ONE

**NO OTHER CLEANER
COMPARES WITH
FULSHINE
ALKALI PROOF
CLEANER**

Only FULD makes FULSHINE . . . and only FULSHINE gives you unequalled, unchanging quality! FULSHINE is Alkali-Proof* . . . absolutely neutral and wax-free . . . contains a chemical reserve which maintains a neutrally balanced solu-

tion and actually prevents the freeing of any harmful alkali. Use FULSHINE without rinsing to produce a beautiful polished effect . . . or rinse for a non-polish finish. Test FULSHINE against any other cleaner you choose and see the results for yourself.

FB *Fuld Brothers* INC.

702 South Wolfe Street, Baltimore 31, Md. • 1256 Factory Place, Los Angeles 13, Calif.

*Registered U. S. Pat. Off.

Liquid Soaps, Floor Seals, Floor Treatments, Deodorant Blocks, Liquid Deodorants, Plumbing Specialties, Special Cleaners, Self-Polishing Waxes, Powdered Waxes, Oil Soaps, Liquid Cleaners, Disinfectants, Insecticides, Metal Polishes, Furniture Polishes, Deodorant Block Holders, Soap Dispensers.

July, 1950

Say you saw it in SOAP!

3



Amplify and fix fragrance with Ethavan and coumarin

Used as fixatives for perfume oils, Monsanto Ethavan and Coumarin Monsanto amplify and make permanent the fragrance of soaps and numerous other items sold at drug and cosmetic counters. Sales-inspiring aromas, put into your products with Monsanto Chemicals, *stay* there to help you win in the rugged competition at retail counters.

Ethavan and Coumarin Monsanto are easy to blend with other ingredients. You get identical results *every time* you use them in a formula, because every ounce is *exactly* like every other ounce.

Such uniformity is possible *only* with synthetics.

Get Ethavan and Coumarin Monsanto from your aroma supplier. Mail the coupon or contact the nearest Monsanto Sales Office for an interesting, helpful booklet, "Something About The Senses." MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1731-E South Second Street, St. Louis 4, Missouri.

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MONSANTO AROMAS AND FLAVOR CHEMICALS

COUMARIN
MONSANTO

ETHAVAN

(Monsanto's ethyl vanillin)

METHYL SALICYLATE, U.S.P.

(Monsanto's synthetic oil of wintergreen)

VANILLIN
MONSANTO

Ethavan: Reg. U. S. Pat. Off.



MONSANTO CHEMICAL COMPANY
Organic Chemicals Division
1731-E South Second Street, St. Louis 4, Missouri

Please send, without cost or obligation, literature on the Monsanto Products indicated.
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Company.....

Street.....

City..... Zone..... State.....

S E R V I N G I N D U S T R Y . . . W H I C H S E R V E S M A N K I N D

SOAP

Volume XXVI

Number 7

July 1950

and SANITARY CHEMICALS

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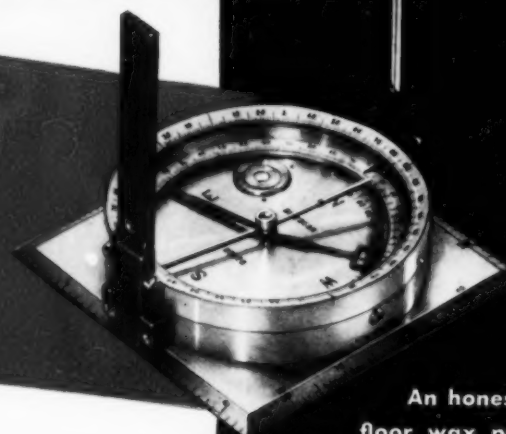


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A GUIDE

TO WAX PRODUCTS PURCHASING

FOR PRIVATE BRAND RESALE



SELF POLISHING WAXES

Candy's Supreme—Candy's Supreme Special AS

Candy's DeLuxe—Bright Beauty

Four floor waxes that are all-around top quality for any given traffic condition. Each imparts the finest protection and beauty to floors for which they are best suited.

Bright Beauty FLOOR CLEANER

An outstanding material for removing even the heaviest wax film and dirt... Brings neglected floors "back to normal." The right cleaning agent to insure the most efficient floor maintenance.

Bright Beauty CREAM FURNITURE POLISH

A cream furniture polish that spreads easily, polishes without excessive effort and imparts a deep impressive lustre. Too, it permits repeated repolishing with a dry cloth saving reapplications time and again; truly a very economical polish of very highest quality.

Bright Beauty PASTE WAX

A paste wax that is properly blended and refined from excellent quality solids and solvents that produce the best drying time and thorough evaporation. A wax that is easy to handle, having "creamy" consistency and stability throughout its stocking and usage period.

Bright Beauty LIQUID (spirit) PREPARED WAXES

Complete line of spirit dissolved waxes that meet a wide variety of demands for durability, color and types of usages. Each its own "Dry-Cleaner," they keep a surface waxed with a superb protective coating necessary to many difficult surfaces such as certain floors (where adaptable), bars, wallpaper, etc.

Bright Beauty GLASS POLISH & CLEANER and SILVER POLISH

As a Glass Cleaner (pink color) it applies evenly with little effort, wipes off easily with negligible "powdering" and produces an undeniable "feel" of cleanness to glass that is actually true in fact. Different in color only as Silver polish, it imparts a highly desirable lustre to all silver without abrasion and can even correct the abuses of scratchy, "quick-polish" inferior products.

Bright Beauty DANCE FLOOR WAX

Basic advantages are freedom from "balling up," thus does not gather dirt and impregnate the floor with hard spots difficult to remove... also is free from dusty effects. Adds the protective quality to expensive ballroom floors that means more "floor-years" to users everywhere.

Bright Beauty Heavy Duty PASTE CLEANER

Really cleans and scours more effectively and quicker than most scouring powders. Depending on application, it can clean to perfection even painted walls to provide a suitable repainting surface. 100% active, free from excessive abrasive quality, it frees almost every surface from all forms of foreign matter to perfection.

An honest appraisal of floor wax products as we see it is offered to guide wax buyers who want the best quality money can buy...

1. BEAUTY AND DURABILITY

should be considered together. Initial appearance is important, but for a waxed surface to remain beautiful it must be durable. Durability depends not only on resistance to the abrasion of traffic, but even more so on resistance to the collection of dirt and to discoloring traffic marks. Durability is really measured by how long the waxed surface maintains a nice appearance before the necessity of complete removal and re-waxing.

2. ANTI SLIP

qualities are necessary in a good wax as a matter of safety underfoot. This important quality does not necessarily require the sacrifice of beauty and protection which are the foremost original reasons for the use of a wax. Look for the proper balance—a wax film which is not excessively slippery yet which is not tacky and does not excessively collect dirt.

3. WATER RESISTANCE

is important, particularly when considering the possibility of wet traffic and the necessity for frequent damp mopping for the purpose of removing surface dirt. Overdoing this quality means greater difficulty in applying multiple coats of wax and may seriously increase the difficulty in removal when complete cleaning and re-waxing is necessary. Water resistance is important, but so is the quality of removability.

4. SOLID CONTENT

when expressed in percentage is not nearly as important as the quality of the solid content. When considering good quality, 12% of solids answers most needs for good planned maintenance programs. Two applications of 12% will give better results than one of 18%. However, the more concentrated material is useful for some programs of maintenance and particularly on "washed-out" floors, etc. Over-waxing should be avoided so that periodic complete removal will not be too difficult.

5. CARNAUBA WAX

is still the most important basic ingredient in our floor waxes. When refined and compounded with other important ingredients and "KNOW HOW," it aids materially in producing the most important features of a good floor wax... ALL AROUND QUALITY OF PERFORMANCE.

• ALL AVAILABLE FOR PRIVATE BRAND ONLY
We do not compete with our jobbers for consumer sales.
We sell only to distributors, except for experimental accounts in Chicago essential to research.

Wax Specialists for over 55 years
Candy & Company, Inc.
2515 W. 35th ST., CHICAGO

**NOW a NEW
HIGH IN MOP
PERFORMANCE
and a NEW LOW
in Mopping COST**

**Faster acting!
Longer lasting!
Lower priced!**

Impartial laboratory tests have demonstrated that the type of cellulose and the spinning method used to form DURA-SORB yarn, result in a faster rate of absorbency than even mops offered at premium prices—by a margin of almost 2 to 1. And, because of DURA-SORB'S durability, users buy mop-heads less often. Finally, DURA-SORB is not extravagantly priced. All this combines to deeply slash the cost of mopping.

Use on Any Floor!

Here is a new man-made mop-yarn that is NOT fragile. It glides over rough and smooth floors... picks up completely. This, instead of tearing and leaving a trail of yarn bits in its wake.

**Dura-Sorb
WET MOP**

TEST IT FOR

RUGGEDNESS

Test on your own floors, like laboratory tests, will prove that DURA-SORB yarn is amazingly tough—not spongy and fragile. Here's a mop-head with a new mileage record.

WATER ABSORPTION

An easy way to test DURA-SORB yarn for absorbency is to put a strand in a glass of water. Let one end overhang the glass. Note (1) how the yarn instantly sinks into the water, and (2) how the water syphons out in a stream of drops! Compare with any other yarn of any material.

RINSABILITY

DURA-SORB has a "greedy" affinity for water and grime. But it divests itself just as readily of its dirty load when wrung out or rinsed.

* We are the manufacturers of the nationally famous **BIG X DUST MOPS, VICTORY WET MOPS and HOLZEM APPLICATORS.** Specification sheets on request.

For ROUGH and Smooth Floors:
The RUGGED

Dura-Sorb
TRADE MARK
SPUN CELLULOSE WET MOP

(Fits any standard mop holder)
(A size for every size floor)

**AN AMAZING
NEW!
MOP YARN**

We guarantee
DURA-SORB
is superior in performance to
any other wet-mop of any
material at any price—or your
money back!

**LEARN
THE 3 R'S
OF MOPPING
BY ACTUAL
TEST**

RUGGED

No need to "use only on smooth floors." DURA-SORB takes floors as they come. Use DURA-SORB on rough floors—any floor!

RAVENOUS

DURA-SORB instantly picks up water and dirt on contact. Independent laboratory tests (ask for copy) prove DURA-SORB picks up faster and holds more water than much higher-priced mops.

RINSABLE

DURA-SORB has a record-breaking ability to drop its load of dirt and grime instantly... Just wring out or hold under running water. It dries out soft and sanitary.

**FILL IN,
TEAR OUT,
MAIL NOW**

MAIL THIS COUPON
Make Your Own Test on Your Own Floors!

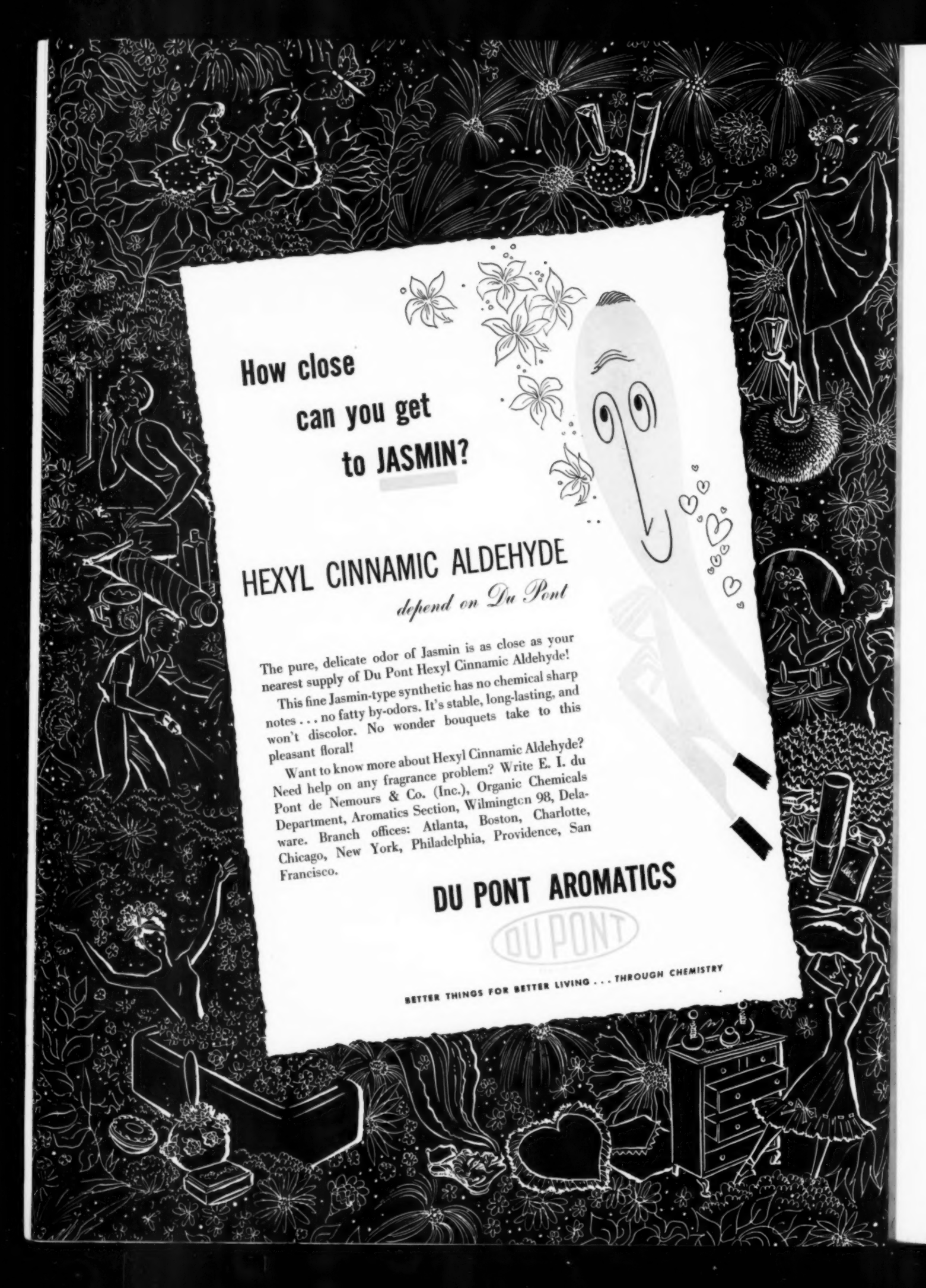
AMERICAN STANDARD MFG. CO. (Incorporated 1908) *
Charles E. Krebs and Walter O. Krebs
2515 S. Green St., Chicago 8, Ill.

Send us a sample of DURA-SORB yarn and specifications. Also quote on a trial shipment of money-back-guaranteed DURA-SORB mops.

MY NAME.....

FIRM NAME.....

ADDRESS.....



How close
can you get
to **JASMIN?**

HEXYL CINNAMIC ALDEHYDE
depend on Du Pont

The pure, delicate odor of Jasmin is as close as your nearest supply of Du Pont Hexyl Cinnamic Aldehyde!

This fine Jasmin-type synthetic has no chemical sharp notes . . . no fatty by-odors. It's stable, long-lasting, and won't discolor. No wonder bouquets take to this pleasant floral!

Want to know more about Hexyl Cinnamic Aldehyde? Need help on any fragrance problem? Write E. I. du Pont de Nemours & Co. (Inc.), Organic Chemicals Department, Aromatics Section, Wilmington 98, Delaware. Branch offices: Atlanta, Boston, Charlotte, Chicago, New York, Philadelphia, Providence, San Francisco.

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DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

Kill 'em quick with

VERNOX

Double Strength INSECT SPRAY



- **More Positive Knock-down and Kill**
- **Free from Disagreeable Odor**
- **Kills More Insects and Kills Them Quicker**
- **Kills Flies, Moths, Roaches, Ants, Mosquitoes, Gnats, Fleas, Bedbugs, Silver Fish, Etc.**

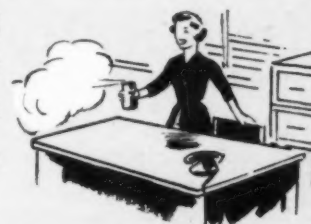


The new Vernox Aerosol Double Strength Insect Spray

Bomb is deadly to household pests. It is formulated from a group of ingredients that are synergistic.

No more coughing or choking from disagreeable after-odors with fresh, fragrant Vernox. Vernox is quick, efficient and so easy to use

... you spray an average size room in a jiffy. Vernox leaves an invisible residue that continues killing many household and institutional pests long after spraying. For more effective results and better health—use Vernox.



(Vernox is available under private label if desired—in quantities of 1 gross or more)

Hyman PRODUCTS CO.

936 West 38th Place • Chicago, Illinois

NOW—CUSTOMERS SAY:

**My liquid
cleaner sales
keep going up**

*... since I package the completely
safe floor treatment—*



ALKATROL

CONDITIONER-CLEANER

NOW! An added service!

**THIS AMAZING
CONDITIONER-CLEANER**

is available with

CHLOROPHYLL
in AIR-FRESHENING ODOR

In one cleaning-conditioning operation the floor surface becomes a giant dispenser that freshens the atmosphere throughout the entire room area. Literature available upon request.

Manufacturers of quality waxes, soaps, cleaners, disinfectants and chemical specialties.

Gives bright life to all floor surfaces!

Here's your best news for *all* flooring surfaces. This **CONDITIONER-CLEANER** penetrates oil and water soluble soil; cuts thru scum and dulling soap film; restores and conditions the floor surface to its original lustrous beauty—virtually without work.

**Easiest way to CONDITION
and CLEAN floors**

Effective in every kind of water! Simply put it down! No rinsing required! Then, take it up! Could

that maintenance job be *easier*? The floor surface, however delicate, is safely cleaned. Dulling soap film is thoroughly removed. The surface is made neutral, and is revitalized!

**A great service by a
great product**

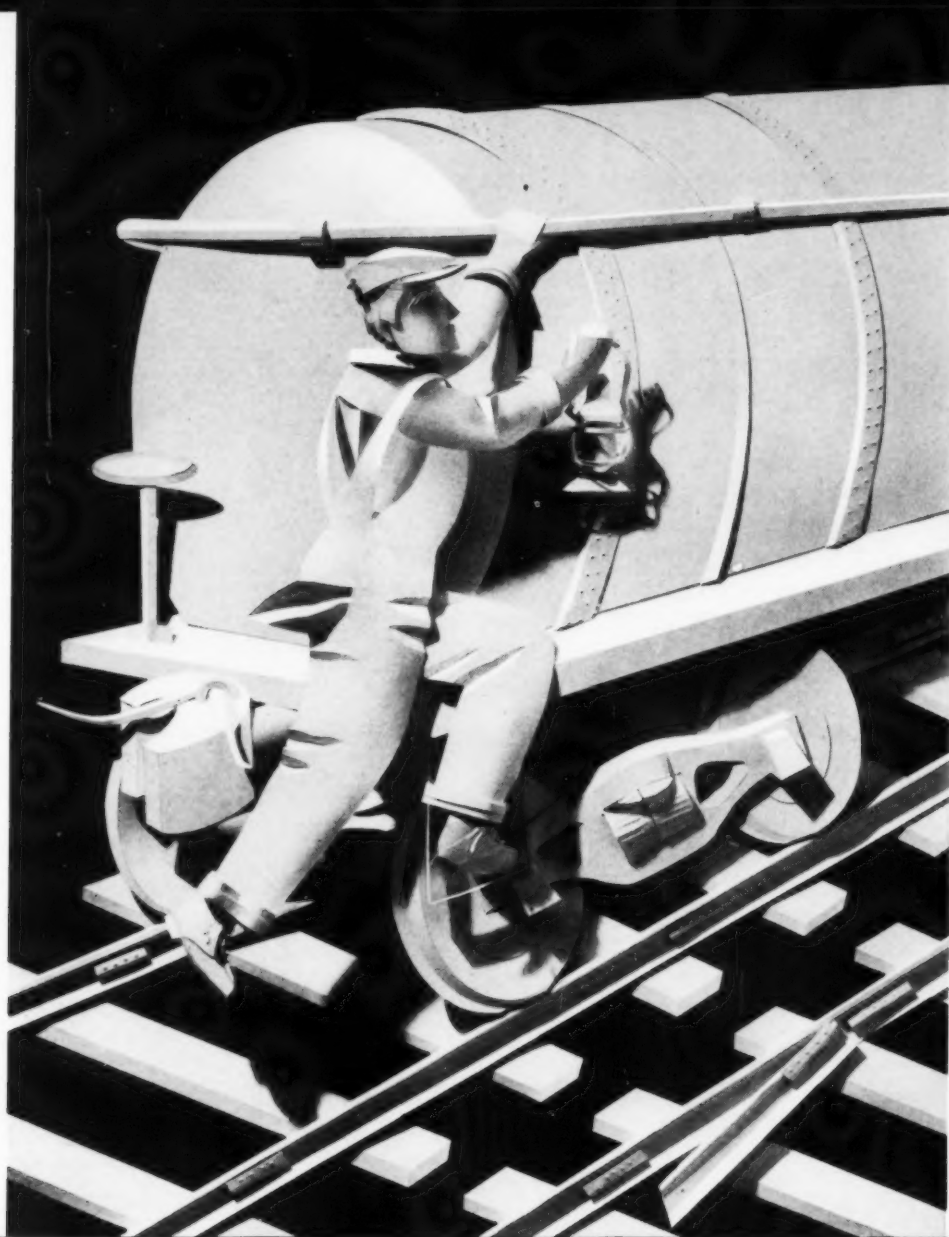
Lustre and safety of slip-resistant wax are increased, if the surface is conditioned beforehand with this remarkable **CONDITIONER-CLEANER**. Write for samples and literature today!



SAFE FOR FLOORS—SAFE TO WALK ON

Listed an **ANTI-SLIP** floor treatment material by Underwriters' Laboratories, Inc.

Chemical Service of Baltimore
HOWARD and WEST STS. • BALTIMORE 30, MARYLAND



paper sculpture by gorrecko-eyan

"let 'er roll"

Whether they "roll" in tank cars,

or any other type of container, Niagara chemicals
are unsurpassed for quality.

EBG* Liquid Chlorine
NIALK* Caustic Potash
NIALK Carbonate of Potash
NIALK Paradichlorobenzene
NIALK Caustic Soda
NIALK TRICHLORethylene
NIAGATHAL*
(Tetrachloro Phthalic Anhydride)

*Trade-mark



NIAGARA ALKALI COMPANY

60 East 42nd Street, New York 17, New York

Methocel:

the Efficient Suspending Agent



If you are looking for a better suspending agent, try the *new* Methocel (Dow Methylcellulose). Here is a product that gives you reliable, efficient suspension in dispersions of many kinds.

In the production of liquid waxes, metal cleansers and polishes of all kinds, the suspending action of Methocel minimizes settling and caking of dispersed solids. Methocel's protective colloid action, plus its thickening properties aid in the suspension of even large particles.

Methocel has been recommended also as an additive to liquid soaps. Because of the well known thickening ability, as little as three or four per cent of high viscosity Methocel will thicken potassium soap solutions to the point where they will not pour. Moreover, Methocel improves sudsing and lathering properties.

Methocel is a superior water-soluble synthetic gum that may be just what you have been looking for to improve your product. Send in the coupon for your free experimental sample of the *new* Methocel, powdered.

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

THE
new

Methocel

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The Dow Chemical Company
Dept. ME-958, Midland, Michigan

Please send free sample of METHOCEL, for use in _____
Check viscosity desired: 15, 25, 100, 400, 1500, 4000 cps.

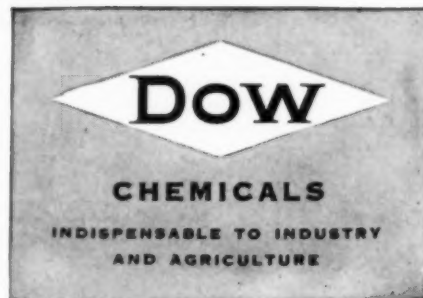
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Firm _____

Address _____

City _____

State _____



**TO KEEP
SOAP COSTS
IN LINE WITH
THE MARKET....**



buy corn!

...says Mr.
fatty acid

ALMOST all soap chemists now concede that fatty acids are their "best buy" for fast, economical soap-making. These acids offer rapid and complete saponification . . . a wider choice of alkalis . . . all in all, *better soaps at lower costs.*

That being true, the present favorable market price of corn fatty acids is indeed important news. As seen in the analysis below, ADM corn acids are remarkably good in quality—comparable, for example, point for point with soybean fatty acids. At present prices, they're a bargain you shouldn't overlook.

Are you fully familiar with the whole broad line of ADM vegetable fatty acids? Get acquainted with the chart at right . . . and plan your orders in combined carload or truckload lots, to cut your costs to rock bottom!

For samples of corn and other ADM fatty acids, mail the coupon at the right.

TYPICAL ANALYSIS

Acid No.	198
Color (Gardner)	7
Titer C°	29
Unsaponifiable	1.4%
Iodine number (Wijs)	116

Take the

ADM

**SCIENTIFIC
SHORTCUT**

You can always follow the market with the broad line of ADM VEGETABLE FATTY ACIDS

FATTY ACID TYPE AND GRADE	PROTECTIVE COATINGS	SYNTHETIC RESINS	INKS	PUTTY AND CAULKING COMPOUNDS	METALLIC SOAPS	LIQUID SOAPS	WAXES AND POLISHES	INSECTICIDES AND DISINFECTANTS	LUBRICATING GREASES	COSMETICS	PHARMACEUTICAL
LINSEED											
Water White	X	X	X		X	X		X			
Regular	X	X	X	X	X	X		X			
SM-500	X	X	X	X	X	X		X			
SM-600	X	X	X	X	X	X		X			
Essential Unsaturated Free Fatty Acids											X
SOYA											
Water White	X	X	X		X	X		X			
Regular	X	X	X		X	X		X			
RO-4	X	X	X		X	X		X			
RO-10	X	X	X	X	X	X	X	X			
RO-115	X	X	X		X	X		X			
CORN-SOYA Double- Distilled				X		X	X	X	X		
CORN Double- Distilled				X		X	X	X	X		
COTTONSEED Double- Distilled	X				X		X	X	X		
COCONUT Double- Distilled	X					X		X		X	

ARCHER-DANIELS-MIDLAND COMPANY
600 Roanoke Building • Minneapolis 2, Minnesota

• Please send samples of

- ☐ CORN FATTY ACIDS ☐ COTTONSEED FATTY ACIDS
☐ COCONUT FATTY ACIDS ☐ SM-600 LINSEED FATTY ACIDS
☐ RO-10 SOYA FATTY ACIDS ☐ SEND DATA ON ADM
CARLOAD PURCHASE PLAN.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

it's time to change to...

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PERFECT FOR PERFUMING...

- LAUNDRY SOAPS
- WASHING POWDERS
- LIQUID CLEANSERS
- POLISHES, ETC.

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- It's a manufactured article . . . free from the price fluctuations of natural essential oils such as Citronella, Sassafras, etc.
- Its high quality never varies, enabling you to manufacture uniformly dependable products.
- Always lower in cost than the natural oils, particularly now with citronella prices on the rise, its use results in production economies and higher profits without lowering quality standards.

WRITE FOR
SAMPLE AND
QUOTATION



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STOP MOLD

on soap wrappers with SANTOBRITE



Why let moldy soap wrappers spoil the sales appeal of your product when it is so easy to control organisms that cause this mold? Monsanto Santobrite (sodium pentachlorophenate, technical), in small concentrations, prevents mold damage on casein-coated paper.

As little as 2.0% of Santobrite, based on the dry weight of casein in the size, gives complete protection against surface microbiological growth. Since these organisms also flourish on the adhesives used on soap wrappers, Santobrite should be incorporated in them. The addition of Santobrite during paper manufacturing is recommended.

If molds on your soap wrappers are slowing down sales, it will pay you to get full details on how to stop these organisms with Santobrite. Mail the coupon or contact the nearest Monsanto Sales Office for complete information. MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1767-E South Second Street, St. Louis 4, Missouri.

Santobrite: Reg. U. S. Pat. Off.

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.



MONSANTO CHEMICAL COMPANY
Organic Chemicals Division
1767-E South Second Street, St. Louis 4, Missouri

Please send further information on the use of Santobrite to stop mold in soap wrappers.

Name.....Title.....

Company.....

Street.....

City.....Zone.....State.....

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**TO GET
Quality
SOAP
PRODUCTS**

LOW IN IRON and Other Impurities

**For
EXCEPTIONAL
PURITY . . .**

For LOW TURBIDITY

**SOLVAY
CAUSTIC
POTASH**

★ 49-50% Liquid in Tank Cars

★ 45% Liquid in Drums

Also in Dry Forms

Specify
SOLVAY



**LIQUID
CAUSTIC
POTASH**



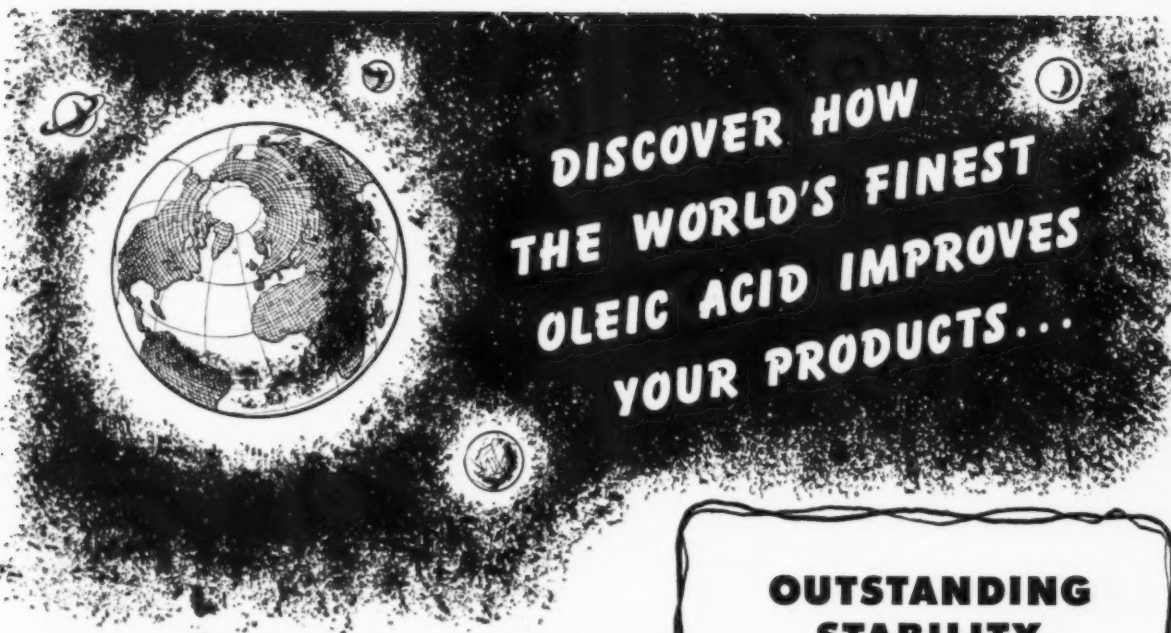
SOLVAY SALES DIVISION

ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

BRANCH SALES OFFICES:

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Calcium Chloride • Sodium Bicarbonate • Specialty Cleaners • Nytron
Sodium Nitrite • Ammonium Bicarbonate • Para-dichlorobenzene
Ortho-dichlorobenzene • Monochlorobenzene • Methanol
Ammonium Chloride • Formaldehyde



Lowest Linoleic Acid Content Available!

EMERSOL 233 L L ELAINE

Typical Fatty Acid Composition

Polyunsaturated Acids	3.9
Monounsaturated Acids	90.0%
Saturated Acids (by difference)	6.1%

Through advanced processing techniques, Emery has made available commercially, a low linoleic oleic acid possessing these unique and outstanding features:

- maximum resistance to oxidation
- blandest odor
- maximum resistance to rancidity
- unique and uniform composition
- highest color & odor stability
- low titer

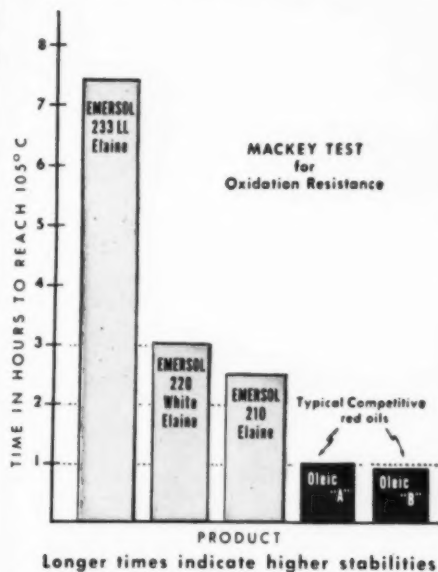
Now you can get the benefits of this purest oleic acid for only 1 cent over regular double-distilled grades. Ideally suited for odorless shampoos, stable soaps, pharmaceuticals, pure esters, textile specialties. Emersol 233 L L Elaine is also a superior replacement for Olive Oil fatty acids.

As indicated by the Mackey Test, all regular grades of Emersol Elaines, single and double distilled, also exhibit superior stability. For this reason, manufacturers prefer an Emery oleic above all others.

See for yourself how the Emersol Elaines can make your products better . . . stay better, longer. Next time . . . buy Emery!

OUTSTANDING STABILITY

The results of the Mackey Test, a convenient means of measuring the auto-oxidation tendencies of oleic acid, clearly illustrate the superior oxidation stability of the Emersol Elaines.



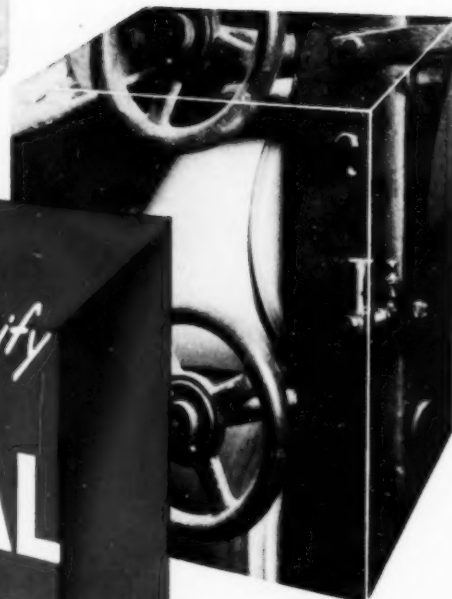
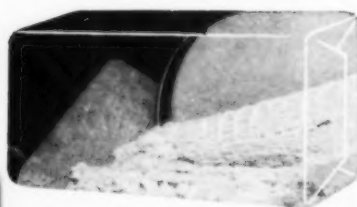
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- Sodium Tripolyphosphate
- Tetrasodium Pyrophosphate, Anhydrous
- Sodium Sulfate (Salt Cake)
- Sodium Metasilicate
- Trisodium Phosphate
- Sodium Silicate Solution

Specify These Other General Chemical Soap Making and Detergent Chemicals, too:

Sulfuric Acid
Oleum
Sulfan*
(Stabilized Sulfuric Anhydride)
Muriatic Acid
Sodium Bisulfite, Anhydrous
Sodium Thiosulfate (Hypo)
Sodium Sulfite, Anhydrous
Oxalic Acid
Aluminum Sulfate
Aluminum Chloride Solution
Disodium Phosphate, Anhydrous
Aqua Ammonia
Glauber's Salt, Anhydrous

You're practically sure to make finer soap products when you use chemicals with the "GC" label. It's a time-honored GUARANTEE of highest quality and uniform dependability. . . . It's the CERTIFICATION of finer chemicals relied upon by leading soap makers America over. To use the best, specify GENERAL CHEMICAL . . . first in "Basic Chemicals for American Industry."



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VERONA AROMATIC E-302
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• A lilting tune, a delightful fragrance... each depends on the harmony of its notes. The purity and fineness of Verona aromatic chemicals will help you achieve harmony in your products and add a fresh note of distinction to them.

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AROMATICS DIVISION
**VERONA CHEMICAL
COMPANY**

26 VERONA AVENUE
NEWARK, N. J.

July, 1950

Say you saw it in SOAP!

18A

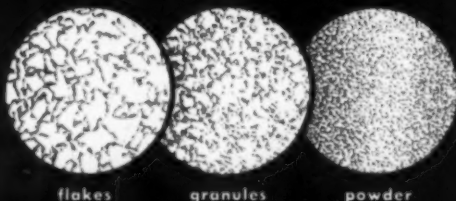
4 good reasons why you should use **D-40 detergent**

FOR WETTING, FOAMING, CLEANING AND COMPOUNDING



NEW, WHITER COLOR MAKES D-40
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3 particle sizes



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D-40 has superior *cleaning action* and really gets the dirt, yet D-40 is neutral and will not harm the finest fabrics.



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D-40 provides abundant *foam* and will add "life" to any compound, yet for special purposes, the foam can easily be eliminated.



D-40 in new whiter color, designed to suit any industrial, compounding or repackaging requirement, is now available in three particle sizes: flakes—granules—powder.

Oronite's Detergent Raw Materials are available in forms to fit the requirements and resources of all possible users. (1) *Detergent Alkane*, a clear, water-white alkyl aromatic hydrocarbon. Available to primary manufacturers of quality detergent products as a base stock for sulfonation. (2) *Detergent Slurry*, the sulfonated derivative of Alkane. A paste-like product for use in many cleaning applications or as a base for further compounding and drying. (3) *Dry Detergents D-40 and D-60*, the dry products from Oronite Detergent Slurry.

Ask for complete technical information from your nearest Oronite office.

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Use good scents to
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Smart products pay . . . smart products sell. Plan a smart, new line, distinguished by *your own* memorable, modern fragrance.

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Ask Norda—*first to talk sales scents*—for your free samples. Test the smell that will sell your *new* products. Send to Norda now—today.

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July, 1950

Say you saw it in SOAP!

18C

PINE OIL

SMELLS CLEAN...CLEANS CLEAN

More and more housewives prefer pine oil soaps for laundering, as well as for general household cleansing jobs. They associate the fragrant odor of pine oil with cleanliness—and naturally so! Pine oil not only smells clean, it's still unsurpassed for quickly penetrating and removing grime and grease.

Hercules® Pine Oils mix easily with other soap ingredients, do not stain, are safe to handle, and low in cost. It will pay you to re-evaluate the economy and sales appeal of these natural aromatic detergents.



HERCULES POWDER COMPANY

INCORPORATED
961 Market St., Wilmington, Delaware



NC50-4

**For All These
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TILE CLEANING

BOTTLE WASHING

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NYTRON

TRADE-MARK REG. U.S. PAT. OFF.

**The Synthetic Organic
Detergent with the Most
Versatile Combination
of Properties**

**No Other Synthetic Organic Detergent Can Match NYTRON'S
Exclusive Combination of Properties!**

NYTRON HAS EXCEPTIONAL DETERGENCY; it is effective on an unusually wide variety of soils; it cleans efficiently in either hot or cold water and retains its detergent action when used in either acid or alkaline mediums.

NYTRON REDUCES WETTING TIME from a matter of hours required in plain water to a matter of seconds; produces splendid results under a wide variety of conditions.

NYTRON RINSES THOROUGHLY, QUICKLY in cool or even cold water; does not leave an insoluble deposit.

NYTRON COUNTERACTS HARD WATER difficulties; more economical because increased quantities do not have to be added to compensate for water hardness; com-

pletely prevents the formation of scum, grease rings, streaks, spots.

NYTRON REMAINS CHEMICALLY STABLE under extreme conditions of temperature, acidity or alkalinity; suffers no chemical breakdown or loss in detergency when used in solutions of either weak or caustic alkalies.

NYTRON HAS EXCELLENT POWER to remove oil and grease from fabrics, surfaces, metal parts.

NYTRON HAS HIGH AND RAPID SOLUBILITY; it goes into solution almost instantly in hot or cold water and will not "salt out" in

concentrated solutions of many acids, alkalies or metallic salts.

NYTRON REDUCES SURFACE TENSION even under extremely varying conditions; addition of only 3½ ounces to 100 gallons of water will reduce surface tension by more than 50%; this action is actually enhanced under hard water conditions.

NYTRON WILL FOAM in any normal concentration of acid or alkali, in distilled or sea water, in ice cold or boiling water.



**Samples of
NYTRON**

are available on request.
Mail coupon for sample,
further information.

SOLVAY SALES DIVISION, Allied Chemical & Dye Corporation
40 Rector Street, New York 6, N. Y.

I want to know more about NYTRON, the Synthetic Organic Detergent with the exclusive combination of properties. Please send me a free sample plus non-technical information and specific technical data.

Name _____
Title _____
Company _____
Address _____
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SSC-7

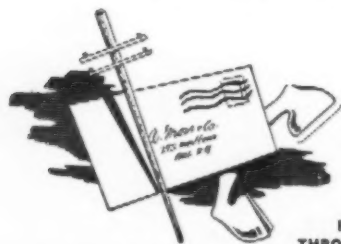
**for
improved
quality
at a lower cost—
try these A. GROSS & COMPANY
FATTY ACIDS**

RED OIL—We've geared our production of Red Oil to meet the increased demand for low titre oleic acids. The oils contain reduced amounts of saturated acids . . . unsaponifiables are reduced to a minimum . . . titres run as low as 3°C.

A. Gross' Red Oil is especially interesting to users situated in cold climates. Particularly valuable is its easier handling feature coupled with ability to make higher soap concentrations.

WHITE OLEINE—USP—This double-distilled Oleic Acid meets USP specifications. Has pale color, low titre and reduced odor. A. Gross' White Oleine—USP is highly resistant to oxidation.

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STEARIC ACID—Now, by combining modern scientific techniques with "know-how" that dates back to 1837, A. Gross & Company offer a **HEAT STABLE** Stearic Acid with a **REDUCED ODOR LEVEL** and increased resistance to deterioration.

This new odor-reduced "Special Improved Stearic Acid" is of importance to manufacturers of fine cosmetics, food emulsifiers, soaps, stearates and other products demanding the highest fatty acid content possible.

A. Gross' Stearic Acids follow the natural balance of Palmitic Acid and Stearic Acid as found in tallow. The importance of the Palmitic Acid content (55%) of natural Stearic Acid, whether for the production of quality face creams or durable buffing compounds, cannot be discounted.

For consumers who desire a higher percentage of Stearic Acid for less demanding applications, we have available a white Hydrogenated Tallow Fatty Acid with a Stearic Acid content of 70%.

COCONUT FATTY ACIDS—Where uniform Lauric Acid content is desired, A. Gross' Coconut Fatty Acids are your assurance of quality. Manufactured to specifications in two grades:

Regular Coconut Fatty Acids—with no fractions removed.

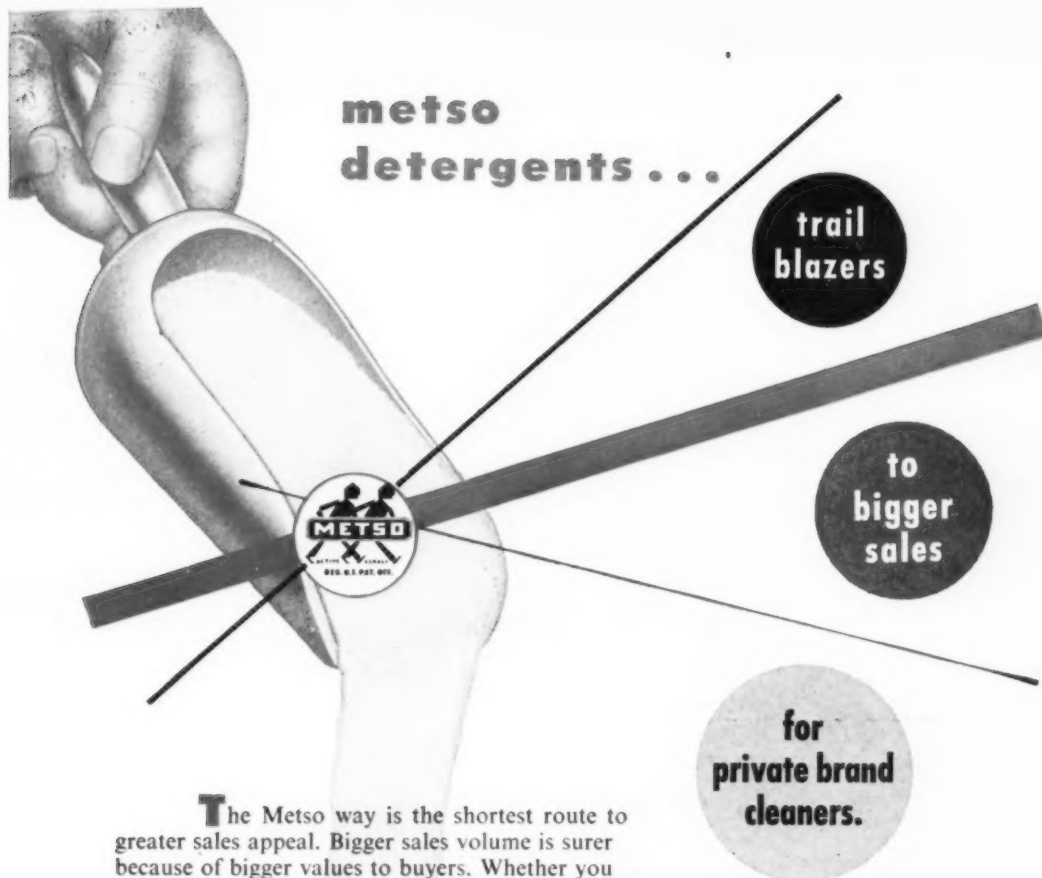
Special Coconut Fatty Acids—with most of the capric and caprylic fractions removed.

Of interest to manufacturers of cosmetics, shampoos, condensates, alkyd resins.

COTTONSEED FATTY ACIDS—Distilled and double distilled grades for light colored alkyd resins.

SOYA BEAN FATTY ACIDS—A quality fatty acid well accepted by the alkyd resin industry . . . remarkably stable and heat resistant for light colored alkyd resins. Will pass the most rigid color requirements of alkyd resin manufacturers.





The Metso way is the shortest route to greater sales appeal. Bigger sales volume is surer because of bigger values to buyers. Whether you compound with other materials or repackage, check over these prime movers for your cleaner sales:

Appearance. Metso Detergents are uniformly attractive—free flowing, clean, white. They are of the same good quality shipment after shipment.

Physical Properties. Metso Detergents are freely soluble in hot or cold water to produce alkaline solutions. They contain properly balanced soluble silica (SiO_2). This unique chemical together with alkaline power steps up washing action and removes more dirt. Equally important in cleaning operations is the ability of soluble silica to prevent dirt from redepositing or resoiling clean work.

Good mixtures. Compatible in mixtures with materials such as other alkalis, soap, synthetic detergents, complex phosphates.

Conveniently packed. In paper bags containing 100 pounds; veneer drums of 100 pounds or the attractive Leverpak fibre drums (300 to 325 pounds).

For complete details on the Metso Silicate Detergents write us or use the coupon below for free copies of descriptive bulletins.



PHILADELPHIA QUARTZ COMPANY, 1152 Public Ledger Bldg., Phila. 6, Pa.

Please send free bulletins:

Metso 99-Sodium Sesquisilicate Industrial Alkali and Detergent. Metso Granular Sodium Metasilicate, Its Properties and Uses. PQ Silicate of Soda in Lump and Powder Forms.

Name

Company

City Zone State

Each year millions of bottles are washed with mixtures based on Nacconol. And that's just one small part of the sanitation problem on dairy farms, at receiving stations, in bottling plants and at the point-of-sale.



when **CLEAN** means... **Dairy Clean**
specify

Nacconol^{*}

AMERICA'S LEADING SYNTHETIC DETERGENT

here's why: Nacconol provides the lowest cost combination of wetting, washing, dispersing and emulsifying.

Nacconol accelerates the bactericidal action of alkaline washing compounds.

Nacconol functions equally well in hot or cold, acid, alkaline or neutral solutions.

Nacconol is America's first mass-produced, low priced synthetic detergent... still leads in production, performance and profits for mixers.

Available in flake, powder or bead form.

For prompt delivery, write, wire or phone our nearest office.

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CYPress 2021

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^{*}Reg. U. S. Pat. Off.

Tests show reduction of skin bacteria on hands with "DYSEPT" containing hexachlorophene

This new liquid soap perfectly meets the needs of surgeons, physicians, hospitals, clinics, restaurants—any application where it's important to maintain skin bacterial population at a minimum level. Independent laboratory

tests demonstrate that convenient "DYSEPT"—with 5% hexachlorophene to the anhydrous soap content—is both bactericidal and bacteriostatic with continuous daily use. Charts show percentage reduction.

CHART No. 1. Percentage reduction in resident bacteria on hands with continuous daily use of undiluted "DYSEPT" for 4 consecutive days. Tests actually ran over 5-day period. "Zero" days represents bacterial population before use of "DYSEPT."

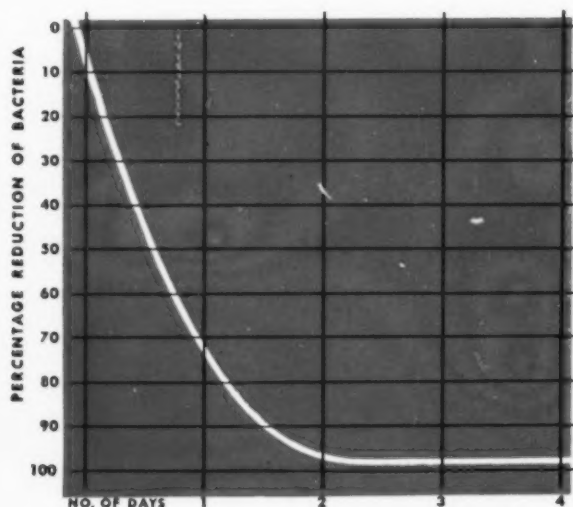
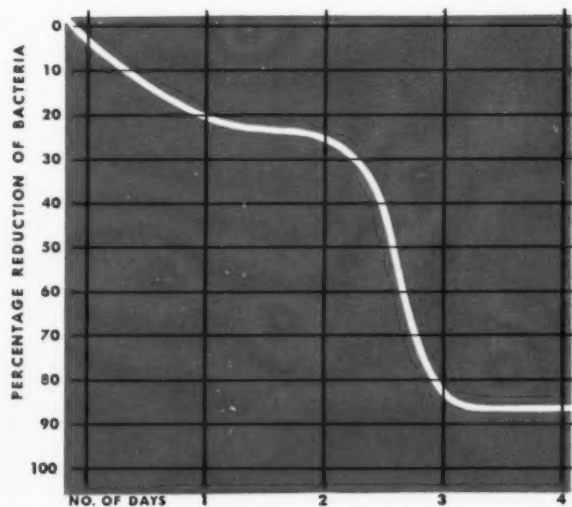


CHART No. 2. Percentage reduction in resident bacteria on hands with continuous daily use of "DYSEPT" diluted 1:1 with water for 4 consecutive days. Again, tests actually ran over 5-day period. "Zero" days represents bacterial population before use of "DYSEPT."



NOTE THESE FACTS ABOUT THE USE OF "DYSEPT"

"DYSEPT," containing 1% hexachlorophene to the total volume, leaves an invisible film not removed by rinsing which, with application one to three times daily for at least five days a week, reduces bacterial skin flora to about 5% of the usual amount and maintains that level. It has been found to reduce surgical scrub-up contact time with daily use. "DYSEPT" is non-toxic and non-irritating, and acts effectively even when diluted with water. A clinical brochure, with laboratory reports, suggestions for using and other technical data, may be obtained by mailing the coupon. "DYSEPT" is available through all Davies-Young distributors.

THE DAVIES-YOUNG SOAP CO.
DAYTON, OHIO
Also makers of
"DYSEPT"
Hand Lotion
(containing Hexachlorophene)

MAIL THE
COUPON
FOR SAMPLE
AND DETAILS

THE DAVIES-YOUNG SOAP COMPANY
BOX 995, DAYTON 1, OHIO

SSC-750

Please send free sample of

- ☐ "DYSEPT" Liquid Soap and clinical brochure.
☐ "DYSEPT" Hand Lotion

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AROMATIC CHEMICALS

Chemically pure



POLAK & SCHWARZ

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NEW INFORMATIVE

18 PAGE ILLUSTRATED BOOKLET ON

Westvaco

SODIUM TRIPOLYPHOSPHATE



Without obligation, please send me a copy of your 18-page Technical Bulletin #808 SODIUM TRIPOLYPHOSPHATE covering its chemistry, properties and uses in detergents, textiles, paper making and oil-well drilling.

NAME _____
COMPANY _____
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To an ever-growing list of users, Sodium Tripolyphosphate brings an interesting, economical combination of values: increased detergency; water softening through sequestration of iron, calcium and magnesium ions; dispersion and peptization of water insolubles; viscosity reduction of slurries. It has found important use as an effective builder for soaps and detergent mixtures.

Pioneer American producer of phosphates, Westvaco has ample production of elemental Phosphorus, can make prompt shipment of finished phosphates from Carteret, N. J., or Newark, California.

Your inquiry for price and delivery schedules on your complete needs for phosphates and alkalis will have prompt attention.

OTHER WESTVACO PHOSPHATES

MONOSODIUM PHOSPHATE • DISODIUM PHOSPHATE • MONOPOTASSIUM PHOSPHATE
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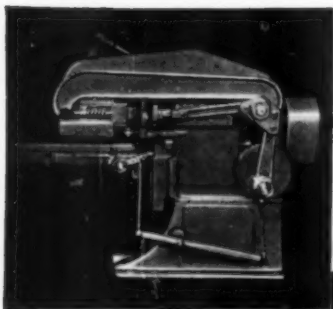
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★ JONES

Specialists in Automatic Soap Presses



Type K Simplex Press

For toilet or laundry soap cakes of any shape (except highly convex cakes) with side band. Speeds of 120-140 cakes per minute.

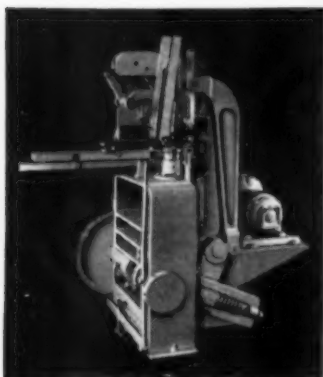
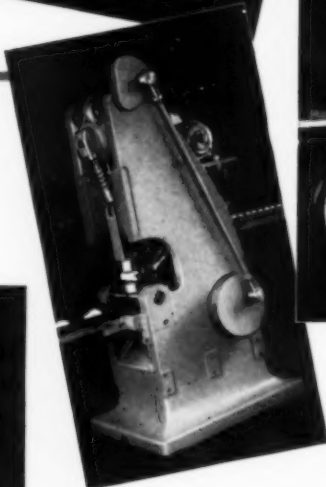
Type K Duplex Press

Applications same as Type K Simplex. Presses two cakes simultaneously. Speeds up to 250 cakes per minute.



Type R Pin Die Press

For toilet soap cakes of unusual shape, oval cakes, or cakes having highly convex faces, with or without side band. Speeds up to 100 cakes per minute.

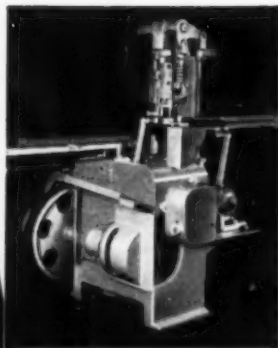


Type E Press

For small toilet soap cakes (1½ oz. or less). Speeds up to 200 cakes per minute.

Jones Presses, with their exclusive, patented toggle motion, have become the standard throughout the world wherever high production, high quality, and perfection of finish are paramount considerations.

Standard Jones Presses illustrated here meet all soap pressing requirements. A Jones Toggle Operated Soap Press will improve the appearance of your product, increase your production, reduce your costs. Write today for complete information.

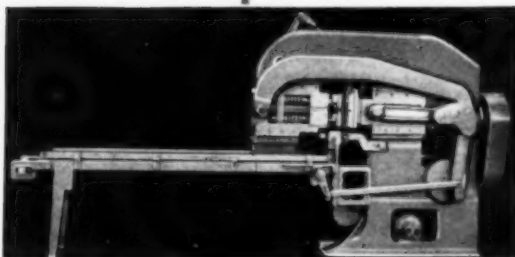


Type ET Press

For small toilet soap cakes with side band. Speeds up to 120 cakes per minute.

Type F Press

For large toilet or laundry soap cakes. Available in Simplex or Duplex Models, pressing one or two cakes per stroke.



R. A. JONES & COMPANY, INC.

P. O. Box 485

CINCINNATI, OHIO

MANUFACTURERS OF JONES TOGGLE OPERATED SOAP PRESSES AND JONES CONSTANT MOTION CARTONERS

THE Kiplinger service has recently stirred up a mild omelette of confusion by discovering, several years late we might add, a new soap ingredient, CMC. Following a brief mention of this "new" and highly interesting detergent ingredient in a recent copy of the Kiplinger Letter, *Soap's* office has received several inquiries asking for further details. We hastened to advise that there is nothing to get excited about. CMC is not new, except apparently to Kiplinger. It is a well known detergent tool that has been in use for several years. Numerous articles dealing with its chemical properties and uses have appeared. We refer interested readers, — and Mr. Kiplinger, to back issues of *Soap and Sanitary Chemicals*.



WILL trouble in the Far East affect America's supply of coconut oil? As yet there seems to be little reason to look for any possible interference with deliveries from the Philippines. At least, in spite of the continuance of serious fighting on the Korean peninsula, American markets for coconut oil have reacted only very mildly. The opinion seems to be quite general that hostilities will be localized, that Russia will not be drawn in directly, that we need expect no threat from Russian submarines in the Pacific, and that American soapers can continue to count upon normal supplies of Philippine coconut oil. We should prefer, however, in the circumstances, to be well stocked up on coconut oil.

It may have been the threat of war, — or perhaps only coincidence, but the Department of Agriculture has just announced that controls on imports of fats, vegetable oils, etc., originally scheduled to end on June 30th, are now to be continued indefinitely. Under the order, imports cannot be brought in without a government per-

mit. The controls were originally set up during the war to help the United States and its Allies to ration world fat supplies.

Should the situation worsen, it is probably just as well that the machinery is already in existence to control and allocate supplies of many strategic raw materials, — essential to the forging of our war potential, as well as for civilian industry.



HOW serious a prolonged cessation of alkali production can be to practically all industry of the United States was aptly illustrated last month during the strike at the three Solvay plants. As producer of some forty per cent of all American caustic soda and soda ash, the shut-down by Solvay brought something akin to a panic for a matter of several days at the start of the strike. The number of alkali consumers who envisioned closing down their own plants if the strike continued for any length of time was large and extended into a dozen or more important industries. The weight of demand thrown on other alkali producers brought a sudden tightening of the market in sharp contrast to its previously soft condition. In the case of the companion product, chlorine, earlier scarcities due to producers' inability to supply demand, quickly reached the acute stage.

In our humble opinion, an extended strike in the alkali industry could cripple American industry just about as effectively as a coal or railroad strike. Not only would our own soap and detergent industry be knocked out, but glass, textile, food, and a host of other key industries would cease to function. In fact, the far-reaching effects of the recent Solvay shut-down are bound to be felt for several months to come. And as a permanent aftermath, the strike settlement as in the case of every strike in history, must eventually mean higher costs to all alkali users.

THE importance of packaging in the success of a product, whether it be a soap, synthetic detergent or eyewash is assuming more importance all the time, according to the experts. The coming and expansion of the supermarket have accelerated the trend to cleaner looking, more colorful and more effective packaging, since in a mass of similar products on the store shelf the one with the most attractive and easiest to read facing panel has a distinct edge. Beyond this, however, is the requirement that the package be easy to handle and store in the home. Regardless of its appearance, unless the package is functional, the chances are that Mrs. Housewife will not reorder.

The effort to improve on the packaging,—and therefore the sales,—of synthetic detergents in liquid form seems to be a case in point. One of the best known of these is now in its third different package design in about as many years. Starting out with a small glass bottle, the product retailed for about what the standard soap or synthetic detergent counterpart in powder form sold for. The large powder product package, however, gave this class of products a decided advantage over the concentrated liquid product. Later, an original package design combining glass, cardboard and metal was used, with mounting sales reflecting the public's reaction to the new container.

The present container, a considerably larger glass bottle packed in a cardboard container appears to be about four times the size of the original bottle, and the price is down about 20 per cent. All of which we understand is helping to boost the sale of a good product that has faced and may still be facing a tough packaging problem.



JUST what is the long range value of merchandise give-away campaigns;—if any?

Nielsen recently surveyed three thousand drug stores to dig up the facts about "one package free with each one you buy" and other give-away ideas. In the case of five manufacturers whose products were studied, sales wound up after a prolonged period just about where they were before the give-away sales boosting was undertaken. But only four of the five engaged in

give-away campaigns, the fifth remaining aloof. All ended up with approximately the same percentage of the market which they had previously enjoyed.

At the beginning of these cut-price sales drives, turnover zoomed upward and then flattened out as customers stocked up at half of the regular retail prices. Thereafter sales sagged badly and many weeks passed before they moved back to a normal level. During the period, manufacturers' dollar volume dropped off sharply as a result of the severity of the price cut. What happened to manufacturers' profits during the same period was not mentioned, but it does not require too much imagination to make a good guess.

Without denying that there is considerable long range sales value in getting more customers *into the habit* of using a certain product, we still believe that these give-away campaigns are disproportionately expensive. We have a feeling that manufacturers often turn to this method of boosting sales in a spirit of self-defense, because their competitors are engaging in some sort of a sales drive and they believe that they too must get in the swim. But, the Nielsen findings are interesting and significant, so much so that they might induce manufacturers to study the results of previous price-cut sales drives before they willy-nilly plunge into the next campaign.



THE trend to increased purchases of synthetic detergents for household use is having a very pronounced effect on soap sales generally and the bar forms in particular. Heretofore, the bar form white floating soap was the overwhelming family favorite for a variety of jobs from overalls to dinner dishes. The excellent performance record of the synthetics for dishes and glassware in particular seems not only to be cutting into soap use in that direction but is spilling over to other uses as well.

Although these changes in consumer soap and detergent buying trends may not show up too clearly yet, confirmation of this belief can be had easily by observing housewives' purchases at grocery stores. The amount of floor and display space given over to the synthetics, usually at the expense of soap products, is a good indication of the revolution that is quietly taking place.

Dry Cleaning Detergents



By O. M. Morgan

New Products Division
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SYNTHETIC organic detergents were originally developed to correct certain processing difficulties in the textile industry. Since the dry cleaning industry is very closely associated with the textile industry keen interest has been shown here in the further development of synthetic detergents ever since their inception. These developments have included both water soluble and solvent soluble types of synthetic detergents. The dry cleaning industry has been of great assistance in testing and evaluating many of these products.

High quality synthetic organic detergents are stable to hard water, acids, alkalis, oxidizing and reducing agents. This combination of properties means a great deal to the dry cleaner who does not always have a supply of soft water and who is required to use

his ingenuity and a great variety of chemicals for the cleaning of garments in service. A certain percentage of these garments must be wet cleaned following the dry cleaning process and if soap is used when soft water is not available, specks of lime soap scums invariably cause difficulties. These are particularly noticeable on dark colored fabrics. Residual lime soap deposits which are left in the fabrics cause the development of undesirable odors. In similar fashion when fatty soaps are used in the dry cleaning process and are not adequately rinsed out of the garments, an undesirable odor results. Dry cleaners operating a dye house are also troubled by insoluble lime soap resistant specks on the garments which will not allow uniform application of the dyestuff. In other words, practically every operation in the dry clean-

ing plant has benefited from the use of synthetic organic detergents.

Solvent Soluble Types

SYNTHETIC organic detergents possessing adequate solubility in either petroleum or chlorinated solvents have been developed especially for the dry cleaning industry. These materials generally possess sufficient water solubility in addition to solvent solubility to make them good emulsifying agents. They are distinct chemical products possessing a neutral reaction making them safe to use on any fabric. They may be used to carry controlled amounts of water into the dry cleaning solvent, thereby improving the removal of water soluble spots in the dry cleaning machine and greatly reducing the amount of work re-

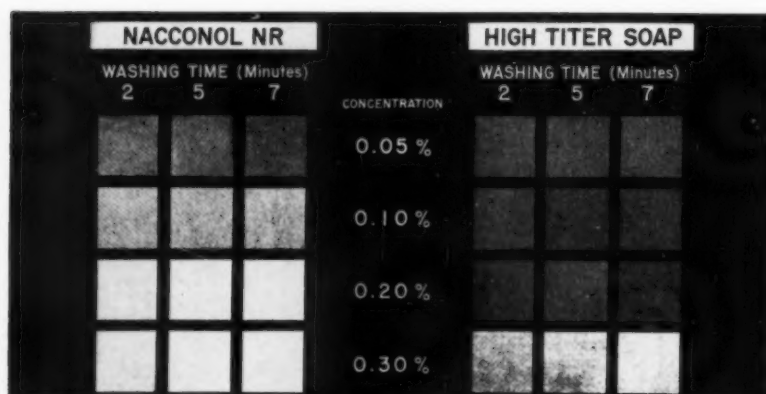


Figure 1. Influence of Washing Time on Soiled Wool Cloth Buffalo City Water (7° Hard—U. S. Scale) 122° F.

quired at the spotting board.

A solvent soluble product such as "Nacolene"* F, which is manufactured by the National Aniline Division, Allied Chemical & Dye Corporation, is stable to oxidation and reduction beyond the degree that might be encountered in the dry cleaning process. For this reason it does not develop offensive odors in the garments even after extended hot room exposure. "Nacolene" F may be removed from the solvent either by filtration or distillation. No troublesome emulsions are formed in the still nor is there any objectionable foaming. Maximum solvent recovery is obtained. The heel in the still is very easy to clean out.

A combination of filter powder and clarifier powder is required to obtain complete removal of "Nacolene" F from the solvent. One of the features of this type of dry cleaning reagent is that it does not cause a rapid pressure increase in the filter. Under normal operating conditions a filter will function for a week or longer before a complete clean out is needed. This type of operation represents a marked reduction in filter powder consumption as well as reduced labor costs for the maintenance of the filter.

Operating costs in a dry cleaning plant may be reduced considerably by the use of these new dry cleaning reagents. They are effective at much lower concentrations than the regular types of fatty dry cleaning soaps. When the reagents are correctly used with the right amount of moisture,

* Trademark "Nacolene" registered U. S. Patent Office by Allied Chemical & Dye Corporation.

hand spotting and steam cleaning are greatly reduced. These are both time consuming and expensive operations which cause serious reductions in production rates. Although the original cost of the synthetic dry cleaning reagents may be slightly higher than that of the regular dry cleaning soaps, this difference is more than cancelled by the reduced operating costs.

Operation With "Nacolene" F

THE best dry cleaning results in petroleum solvents are obtained by using "Nacolene" F in conjunction with controlled quantities of water. For instance, an emulsion which is suitable for use on all types of fabrics may be prepared by adding one volume of water, preferably warm, to one volume of "Nacolene" F. Stirring is continued until the emulsion is uniform. The cleaning operation follows:

Operation 1—Break
—Run 20 minutes in clean solvent with the filter operating.

Operation 2—"Nacolene" F emulsion
—Shut off filter—
Add 3-4 pints of the above emulsion for 100 gallons of solvent—Run 15-20 minutes.

Operation 3—Rinse
—Add one pound of filter powder

and two pounds of clarifier powder and run on the filter until clear.

If it is desired to operate with two washers, operations 1 and 3 may be conducted in Washer No. 1 with lesser amounts of clarifier used in operation 3. Operation 2 may be conducted in Washer No. 2. The solution is fortified with 1-2 pints of the "Nacolene" F emulsion for subsequent loads of fabrics. When the solution becomes too dirty, it should be filtered with clarifier powder or distilled.

The method of operation in chlorinated solvents is essentially the same as that for petroleum solvents with the exception that the "Nacolene" F is generally added to the

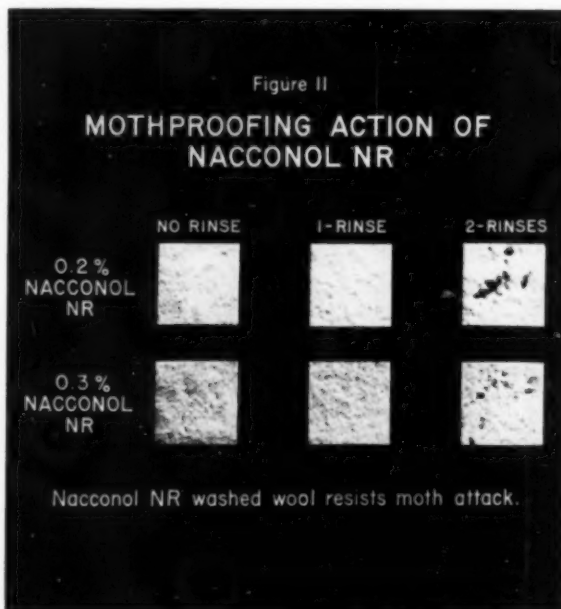
TABLE I
Washing Woolen Garments or Blankets After Dry Cleaning

Operation No.	Name	Nacconol NR Lbs./100 Gal.*	Temp. °F	Time (Min.)
1	Suds	1-2	90	5
2	Rinse	—	80	3
3	Rinse	—	60-70	3

* For very dirty work use an equal amount of laundry soda.

TABLE II
Rug Cleaning Formula

"Nacconol" NR	2 lbs.
Tetrasodium Pyrophosphate	1-2 lbs.
Water	50 gal.



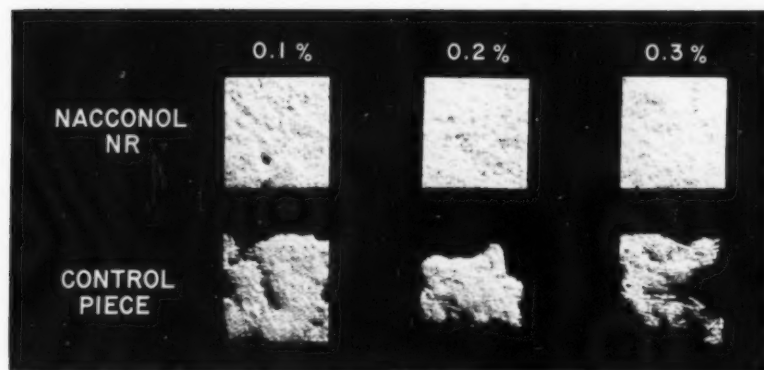


Figure III. Moth repelling action of Nacconol NR. Soiled wool is relished by moth larvae.

solvent as delivered at the rate of 1-2 pints per 100 gallons of solvent depending on the soiled condition of the fabrics. Some plants prefer to use a small amount of water in conjunction with the reagent and in this case the emulsion is usually prepared by using 2 volumes of "Naccolene" F with 1 volume of water. Two to three pints of this emulsion are used per 100 gallons of solvent.

Water Soluble Types

SYNTHETIC organic detergents of the water soluble type are ideally suited for wet cleaning in dry cleaning plants. These are neutral products which will not damage fabrics or color. A color that is fast to water will not be affected by a synthetic detergent such as "Nacconol"® NR.

Many dry cleaning plants do not possess a water softener, but this does not make any difference where

synthetic detergents are used. "Nacconol" NR possesses cleaning ability in either hard or soft water.

The dry cleaner must always protect himself against shrinkage of his customer's garments. This is particularly bothersome in the wet processing of woolen fabrics. The rapid cleaning action of the synthetic detergents allows processing times to be shortened, thereby reducing felting and shrinking hazards. This rapid cleaning action is illustrated in Figure I where the rate of dirt removal is compared for "Nacconol" NR with soap. Since the synthetic detergents are also very free rinsing, economies may be effected in both water and time. The chance of shrinking the fabrics is also greatly reduced.

Lower washing temperatures may be used with "Nacconol" NR

*Trademark "Nacconol" registered U. S. Patent Office by Allied Chemical & Dye Corporation.

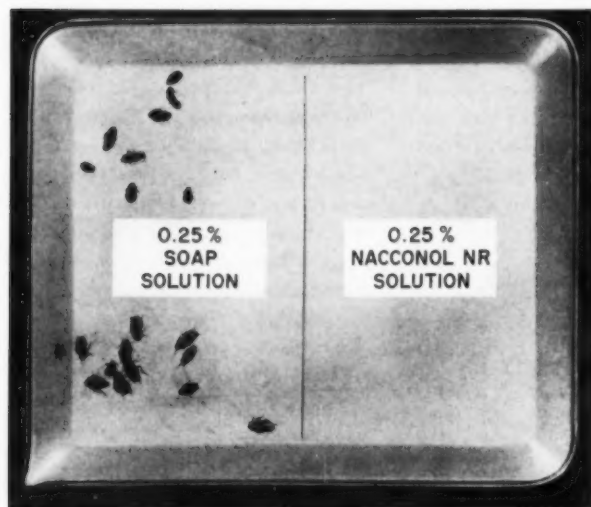


Figure IV. Showing preference of cockroaches for soap.

than with soap. This helps to conserve hot water which is often a problem. A typical washing formula for woolen garments is presented in Table I.

Rug Cleaning

SYNTHETIC detergents should be selected carefully for the cleaning of rugs. Since it is difficult to obtain adequate rinsing for a rug, and this particularly if it is cleaned with a rotating brush type machine on a platform, the free rinsing properties of the synthetic detergent are most important. A detergent should be selected which does not leave sticky residues on the pile fibers of the rug. Such a sticky film will cause dirt to adhere to the rug thereby allowing it to become soiled more rapidly. A good rug cleaning formula is presented in Table II. This formula may be prepared with warm or cold water, a minimum of effort being required.

Upholstery Cleaning

THE wet cleaning of upholstery may be accomplished rapidly and with excellent results with a suitable synthetic detergent. Here again the free rinsing properties of the detergent are most important. A typical cleaning formula is presented in Table III.

TABLE III

Upholstery Cleaning Formula

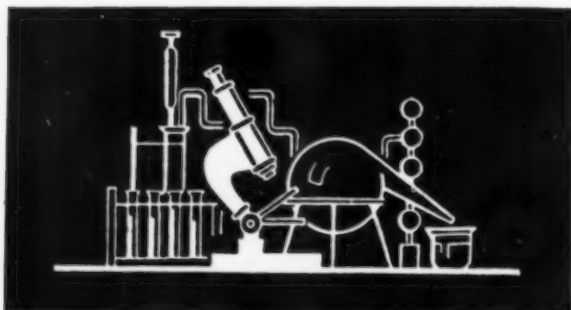
"Nacconol" Z	2 lbs.
Water	50 gal.
Make rich suds.	
Clean with suds.	

The "Nacconol" Z solution should be worked up to a rich lather with a sponge. When this is done, the sponge is squeezed out of the solution and used to pick up a portion of the foam with which to clean the upholstery. By operating in this manner a minimum amount of water contacts the upholstery fabric. Another sponge, squeezed out of clear water, is used to rinse the upholstery.

Care of Fabrics

ADRESS or a davenport which is maintained in a clean condition does not have as much attraction for insects as a similar fabric in a soiled condition. In most cases the insect eats the fabric for the nutritious foreign

(Turn to Page 133)



Evaluation of

Linoleum and

By Jay C. Harris, Mary Rose Sullivan

CONSIDERABLE amounts of cleaning agents are used in restoring the cleanliness of painted surfaces, as well as linoleum and other relatively non-porous floorings or floor coverings. Consequently, this field of detergent investigation perhaps merits more attention than it has had.

It is rather generally agreed that the most satisfactory method for estimation of detergent characteristics is one utilizing the specific surface to be cleansed. It is preferable that the soil actually encountered be used in evaluation work, but this may prove of such widely divergent characteristics that some arbitrary kind generally is chosen. The application of mechanical force in cleaning is likewise important, and must be simulated in some reproducible manner for laboratory evaluation.

Although a painted panel test has been available for a number of years, it apparently has not been applied to linoleum. Our experiments were based upon the equipment and method described in Federal Specification for Cleaner; for Painted Surfaces, Containing Synthetic Detergents, P-C-431. This utilizes the washability apparatus described in Bureau of Ships Specification 51S46 entitled Soap; Salt-water, Bar Form. The test method is comprised of a so-called standard soil and a standard test for submitting the soiled panels to the washing action specified. Common to all test methods, and washability methods in particular, the composition of the so-called standard soil, the method of application, the reproducibility of the standard soil,

and the reproducibility of the wash test methods are all suspect. Presumably, acceptance by branches of the Federal government of these methods indicates a degree of reliability in the segregation of useful materials for the purposes indicated.

The object of this paper is to present our experience with this test method, outlining the precautions required, the use of standard comparison samples, and application of the method to linoleum cleaning.

The equipment used in this test work on cleaners is commercially available (Henry A. Gardner Laboratories, Inc., Washington, D. C.). The soiling and preparation of test panels was accomplished as follows:

Preparing Painted Test Panels

STEEL panels 4 x 6 x 1/32 inches were used. These were cleaned in a carbon tetrachloride vapor degreasing bath before painting. Three coats of either Lowe Bros.' "Mellotone White" (Flat) or of Lowe Bros.' "Plax White 239" were applied either by brush or spray. Three coats were applied, aging 48 hours between coats and a final 30-day aging period following the final coat and before use. Panels which had been previously painted and tested were re-coated by a single paint application and aged a minimum of 24 hours before re-soiling.

Standard Soil and Application

Material	Parts by Weight
Metallic Brown (Prince Mfg. Co.)	20
Kerosene	20
Carbon tetrachloride	20
Nujol	1
Sohio Lube Oil (SAE-60)	1
Hydrogenated vegetable oil	1

The composition below was well shaken and then applied with a one-half inch brush to an area 4 x 2 1/2 inches centered on the panel. The panels were baked for 30 minutes in a horizontal position in an oven arranged to circulate air over them at a temperature of 100-105°C. Later experiments showed that the panels could be dried for 30 minutes at 110°C. in a horizontal air-draft oven to obtain the same general characteristics. However, unless the oven can be controlled very accurately, it is essential to bake all panels simultaneously to be used in any given series of tests. Slight differences in baking time or temperature markedly affect the cleaning efficiency. Panels generally were used within a period of 24 hours after preparation.

Washability Apparatus. The apparatus used was closely comparable to that described in the Bureau of Ships Specifications and, in our case, consisted of a metal base plate to one side of which was mounted a heavy-duty 6-Volt electric windshield wiper. The wiper arm was 6 inches long, and to it was attached a stainless steel box, 4 1/2 x 3 x 1 inches which served as a holder for the cellulose sponge. The weight of the arm, box and wet sponge (Du Pont, fine-pore cellulose, film sponge) was adjusted to 16 ounces by means of lead washers placed on pins at the corners of the box. In operation, the panel is held in place by brass stops and the number of strokes is recorded by an automatic counter.

Reflectance of Test Panels. The Hunter Multipurpose Reflectometer equipped with G-E Photoelectric cells and an Amber Tri-stimulus Filter was used for reflectance measurement of the unsoiled, unwashed painted panels,

* Before 36th Mid-Year Meeting, C.S.M.A., Chicago, June 13, 1950.

Paint Cleaners

and Roland E. Kamp*

Monsanto Chemical Company
Central Research Department

and the soiled, washed painted panels. A standard plaque giving 80 per cent reflectance relative to magnesium oxide was used to calibrate the instrument.

Control Samples. It quickly became apparent from early work that a standard detergent was desirable for comparison purposes, and a standard sample of trisodium phosphate (crystalline) was adopted for this purpose. Duplicate test panels were used for each test concentration evaluated. It was observed for a set of test panels that during the first week of test, the cleaning efficiency of the standard sample dropped approximately 2 per cent a day. After the first week, the drop was less, averaging approximately 0.5 per cent a day.

Test Solutions. Cleaning compounds were tested for efficiency at concentrations of 2.0 per cent, 1.0 per cent and 0.5 per cent in distilled water at room temperature. Other concentrations and other water conditions could be used as required.

Procedure. 100 ml. of test solution were poured into a 7½ inch width photographic developer pan. This volume of solution was just sufficient to cover the test panel completely. The panel was allowed to soak for 60 seconds, then removed from the pan and placed in position on the washability apparatus. In the meantime, the cellulose sponge was wet with 50 ml. of test solution and placed in position at the end of the wiper arm. The wiper motor was then started and the wiper arm passed over the test panel at the rate of 1 stroke per second for 100 strokes. Approximately 12 ml. of test solution were allowed to drip onto the test panel for the 100-stroke period. The test panel was then

removed from the apparatus, rinsed thoroughly with distilled water, replaced in the apparatus, reversed end for end from the previous position, and the 100-stroke cycle repeated using a fresh sponge wet with 50 ml. of fresh test solution, dripping the 12 ml. volume of solution onto the panel during the cleaning process.

The washed panel was removed from the washability apparatus, again rinsed thoroughly with distilled water, and allowed to dry at room temperature. The reflectance of the soiled, washed painted panel was measured as previously described.

Cleaning Efficiency. The cleaning efficiency was calculated by the following formula as described in the specifications mentioned above:

$$\% \text{Cleaning Efficiency (C.E.)} = \frac{R_2 - 100}{R_1} \times X$$

where

R_1 = Reflectance of unsoiled, unwashed painted panels

R_2 = Reflectance soiled washed painted panels.

For our work we introduced the term comparative cleaning efficiency (C.C.E.). The duplicate values for the test panels for each concentration were averaged. These results were then reported as a percentage of the cleaning efficiency obtained with TSP (crystalline) as follows:

$$\frac{\text{C.E.} \times 100}{\text{C.E. TSP}} = \text{Comparative Cleaning Efficiency (C.C.E.)}$$

Preparing Linoleum Test Panels

THE whitest, plain linoleum locally available was used in these

tests. (Armstrong's Heavy-Grade, Safety Back Standard Gauge.) The soil used was the same as for the painted test panels and a fresh mixture of soil was made for each series of panels prepared.

A well-stirred mixture of the soiling medium was applied with a ¼ inch brush over an area 4 x 2½ inches centered on the linoleum panels. The soil was applied in a manner to obtain as uniform a coating as possible. After air drying, the panels were baked in a horizontal position at 80° C. for 10 minutes in an oven in which the air could be circulated. The panels were then used immediately.

Test Solutions and Procedure. The test solutions used were adjusted to an 0.2% concentration in distilled water. The cleaning procedure used for painted panels was repeated for linoleum.

Control Samples. As in the case with the painted surfaces, it was found necessary to use a control sample as a means for comparison of cleaning efficiency. Santomerse No. 1 was used in this case. At least two, and preferably more than two linoleum panels were used for each comparative test.

Statistical Analysis

IN any series of replicate determinations it may be expected that differences will exist between the individual results obtained. In an analytical procedure this difference should necessarily be small. In the case of cleaning methods where so many variables are involved, the difference between duplicate samples may be comparatively large. However, provided that a sufficient number of replicate tests are made, and that control by means of a standard sample is included, it is possible to use statistical methods for comparison of data.

Discussion

TO show how these methods (ASTM) (Manual on the Presentation of Data) were applied, certain of our data were segregated for comparative purposes.

Table I shows the statistical analysis for painted panels cleaned with a specific type of cleaning composition showing the variation which

TABLE I
Statistical Analysis
Painted Panels
Observations on Composition C

Trial No.	Comparative Cleaning Efficiency (1% Solution)
1	112
2	112
3	113
4	103
5	109
6	105
Mean Average (\bar{X})	109
σ	= 3.87
P_s of 0.90	= 3.4
Limits of \bar{X} (6 observation)	= 109.0 ± 3.4
(Reference—ASTM Manual on Presentation of Data)	

results from replicate determination. The average values are shown as \bar{X} , the standard deviation is σ , while P_s refers to the statistical probability, in this case set at 0.90 (9 chances in 10 of being correct).

It becomes apparent from Table I that the limits for the mean value would be 109.0 ± 3.4 , 9 times out of 10, which permits us to compare this value with any other set under similar statistical control, to determine whether or not actual differences are apparent.

Aside from the use of statistical methods of analysis, the variation in the data obtained is pertinent and is relatively high as compared with an analytical method, but this was to be

TABLE II
Variation in Cleaning Efficiency
Various Lots of Painted Panels
Washed With Trisodium Phosphate Crystalline at 1% Solution Concentration

Set	Individual CE	Average CE
1	71.4 85.9	78.6
2	80.6 85.9 83.6	82.7
3	73.9 76.0	75.0
4	75.9 86.7	81.3
5	83.2 80.1	81.6

expected from the many variables involved.

Table II shows the differences in the cleaning efficiency obtained for the standard sample of trisodium phosphate obtained with different sets of test panels. It is apparent that the variation is considerable. Since this is the case, and to reduce the data to comparable levels, the comparative cleaning efficiency was used as a basis for evaluation. In other words, the average cleaning efficiency for the individual composition was compared with the average cleaning efficiency of the trisodium phosphate-washed panels obtained with the same lot of soiled panels. Reference to Table III will show that this method of operation

TABLE III
Variation in Comparative CE
Different Lots of Painted Panels
Average of 2 Panels
1% Solution Conc.

Composition	Test No.	Individual CE	Average CE	Comparative CE
A	1	79.4 81.2	80.3	107
A	2	80.0 78.8	79.4	107
B	1	93.2 92.4	92.8	114
B	2	75.3 81.4	78.4	106

has markedly reduced the apparent variation between results, and has reduced them to limits which when evaluated by statistical methods, permits differentiation between samples which otherwise appear to vary tremendously.

Another method for determination of whether differences exist between samples is utilization of the "twice standard error" method. According to Fisher ("Statistical Methods for Research Workers," Oliver and Boyd, Edinburgh and London), if the difference between two mean values is equal to, or greater than twice the larger standard error, the chances are 95.45 out of 100 that the differences are real.

Table IV shows examples for the use of this method of comparison. Applying this reasoning to the values for Compositions A and B, it will be seen that the difference between the two samples for the C.C.E. value is greater than twice the larger standard error (that of Composition A), consequently, the chances are 95 out of 100 that Composition B is significantly superior. Likewise comparing Composition C with Composition B it will be found that the difference between these two compositions is 2.2 and that twice the larger standard error is 2.3, so that the chances are 95 out of 100 that there is no significant difference between the two samples. Another point of interest in this table is the widely divergent cleaning efficiencies obtained for the Santomerse comparison material. This is no reflectance on the cleaning efficiency of the Santomerse prod-

(Turn to Page 133)

TABLE IV
Statistical Analysis
Linoleum Panels

Period	Detergent	No. of Panels	CE	σ	σM	CCE*
1	Santomerse No. 1	5	76.78	5.36	5.36	100.0
	Composition A	3	80.16	8.84	12.52	104.3
	Composition B	3	90.66	1.62	2.30	118.1
2	Santomerse No. 1	4	80.25	2.50	2.88	100.0
	Composition C	3	94.66	0.81	1.14	115.9
3	Santomerse No. 1	2	69.90	0.50	1.00	100.0
	Composition D	3	80.20	2.41	2.90	114.8

*Comparative Cleaning Efficiency

σ = Standard Error

σ = Standard Deviation

\bar{X}

ANTISEPTIC SOAPS

A Simplified In-Vivo Method for Determining Their Degerming Efficiency

By Arthur R. Cade*

Givaudan Corp.

SKIN degerming, a term introduced by Price back in 1938, refers to that particular phase of skin asepsis wherein the number of bacteria present on and in the skin are reduced in count below a point recognized as safe from a surgical standpoint. The term "skin degerming" is not synonymous with "skin sterilization," "skin disinfection," or "skin antisepsis," although closely associated with each of these conditions.

Skin-sterilization infers the complete removal of all types of bacteria and other micro-organisms from the skin. This is almost an impossibility as far as a human is concerned, if we are to leave the skin intact at the same time.

Skin-disinfection, although often used as a term for a process quite analogous to that of skin-antisepsis, is in reality a misnomer. This is because the use of the word disinfection should be limited to actions on inanimate and not on animate surfaces.

Skin-antisepsis relates, as a rule, to a germicidal action wherein the killing of the bacteria on the skin surface has been accomplished (or is desired); and a residual condition exists so that new bacteria which might contact the skin surface, so treated, will be killed.

Skin degerming, refers to treating the skin, both on its surface layer as well as in the several deeper cutaneous layers in such a manner that the total bacterial count, as far as viable organisms are concerned, has been reduced to a practical minimum (from

the surgeon's standpoint). Thus, this latter process includes antiseptic, bacteriostatic, and germicidal actions. In other words, a degerming process may be considered good or successful if it brings about a lowering of the skin resident flora to a point which at least equals or preferably exceeds that produced by the surgeon through the application of the standard hospital scrub-up technique. The process differs from skin sterilization in that it does not necessarily require that the removed bacteria be killed, nor that the skin so treated be capable of killing new bacteria which may fall upon it during or after the degerming process has been carried out.

Degerming thus has its application both in the field of aseptic or antiseptic surgery, as well as for practical prophylactic purposes to keep the bacterial count of an individual's skin (such as a food handler, nurse, machinist working with cutting oils) at a minimum.

A variety of these washing techniques exist in the scientific literature. They are all more or less modifications of the original and basic Price technique. To save time and space, therefore, we will present only details of the latter and refer to the others bibliographically. Our own procedure is likewise a modification of the Price method.

Price, in connection with his work on skin sterilization, developed his multiple-basin handwashing technique. The procedure which he used for studying the bacterial flora of normal skin was based upon his findings

that if a series of basins is used and the hands and arms, e.g., up to the elbow, are scrubbed in each one for the same length of time, in a perfectly uniform manner, the flora of the skin will be reduced at a constantly diminishing rate. The bacterial counts as obtained by plating the rinsings will produce a logarithmic curve, showing these reductions per successive basin to be in the order of a definite proportion. The normal counts of removable bacteria for this area is between 20 to 40 million. Our experience has shown that around 12 per cent of the remaining organisms is removed by each uniform washing or scrubbing process. On this basis, if 4,000,000 bacteria are removed in the first wash there will be found approximately 3,500,000 in the 2nd basin; 3,100,000 in the 3rd; 2,700,000 in the 4th; 2,400,000 in the 5th and 1,300,000 in the 10th.

Our own experimental data fall well within the average of these other figures and will be presented in curve form later on in this paper. Deviations from this standard removal rate of bacteria from the skin may be brought about by a variety of influences such as the wearing of rubber gloves, applying materials which coat the skin surface with a film, and the use of germicides. Degerming agents, such as "G-11",* fall into this latter group. Its efficacy in this regard may, therefore, be readily determined by applying a slightly modified Price technique.

Other experimentors, such as Pohle and Stuart³, Traub² and co-

* Before 36th Mid-Year Meeting, C.S.M.A., Chicago, June 13, 1950.

* G-11 (brand of hexachlorophene); trademark Sindar Corp.

workers, Vestal Laboratories⁶, Seastone⁴, Udinsky⁵, etc., have developed and used other modifications of this Price method, all basically the multiple-washing technique with changes such as in the number of basins, the time and area of washing, applying the germicidal soap for washing in the central basins (i.e., the 4th, 5th and 6th), etc. Our technique has been developed after having taken all of these tests into consideration and compiling therefrom a method which gives, we believe, the most reliable results consistent with the minimum use of time, efforts and materials, as well as comfort to the subject, without the loss of any appreciable degree of accuracy.

In general, our test includes the use of only 5 basins, instead of the 10 as recommended by Price, since the degerming effect of an efficient compound like "G-11" is such that the skin flora count becomes so low that the removals do not show any marked difference in the respective 5th to 10th basins. The curves drawn from the data as found become practically a straight line. We feel therefore that we gain all the information needed from the 5th basin data, and so stop our tests at that point.

Furthermore, one of the basic aims or qualifications of a good degerming agent is that it should produce at least by the 5th basin (preferably at the 3rd) a skin flora count lower than that as produced at the 10th basin level by the standard hospital surgical scrub-up process.

As a matter of fact the data curves will show the initial count (1st basin) from a subject who has used G-11 soap regularly for a period of one week or more to be lower than that as obtained from the 10th basin count, using the more severe hospital surgical scrub-up procedure.

As a word of explanation, the normal skin contains millions of bacteria, the majority of which are beneath the surface and not on the top outer layer. This is probably contrary to what one might expect without having the knowledge of these experimental facts. As an approximation of average figures, we have seen above that some 40 million are on and in

.....
A technique has been developed for evaluating the germicidal effect of antiseptic agents in soap. The method is based on earlier tests.
.....

the skin of the two hands and arms (to the elbow). Only about one million of these are "transients," or reside on the skin surface. The other reside below the surface in the pore openings, in the cracks, folds, and crevices of the folded skin tissue, etc. These are "resident" bacteria, and represent those such as are removed by a normal rate per washing after the first basin. Most of the "transients" appear to be removed mechanically by the first washing. Therefore, if a suitable treatment can be applied to the skin, such as that produced by the daily use of a satisfactory degerming agent, then the resident bacterial count therein becomes lowered to a point at which even the first washing (Basin 1 results) will show very low counts, and this will, of necessity, include most of the transient bacteria. By the time the third washing is completed (3rd basin data) the counts, which represent practically entirely only resident bacteria, will be seen to be relatively low, sufficient to produce in effectiveness the desired degerming result (i.e., to reduce the skin flora to a level below that produced by using the standard surgical scrub procedure).

It should be emphasized here that in order to obtain uniform and reliable data as to the true evaluation of a specific degerming agent alone or blended in a selected vehicle such as soap, it is essential that the subject, whose skin is being examined for its bacterial flora counts, use the degerming agent regularly on the skin at least three times a day for his or her daily washing routine. Irregularities in that procedure, of course, will bring about irregularities in the washing-count. This is so because the efficacy of the degerming material results from its getting into the skin, attaching itself therein so as to be available to act continuously on the bacteria present in

the sub-surface layers, thereby preventing their multiplication to any appreciable degree, and thus to be held in sufficient concentration to produce that desired end. Any changes in application naturally will change those factors and thus the bacterial count. Similarly, the use of solvents of any kind, which will tend to remove the degerming agent after it has established itself within the skin, will serve to produce irregular results since in its effect it allows resident bacteria within or beneath the skin surface to grow again to a varying degree.

Experience has shown that on the discontinuance of the use of the degerming agent the skin gradually returns to its norm as far as bacterial count is concerned. The exact time required varies with the individual degerming agent used, and other factors. For "G-11" soap this time is about one week. The return appears to be quite gradual. Therefore, when running a degerming evaluation procedure, covering a two weeks' period, without detriment to the desired end-point figure (10th day reading) one can eliminate the daily use of the degerming agent (e.g. "G-11" soap) on the two days of the week-end period. However, the subject participating in the test should definitely refrain from using solvents, creams, and the like during that time, since these might bring about a more or less complete removal of the "G-11" retained on the skin.

Another point to emphasize is that uniformity of technique is also extremely essential. This applies both to the daily washing routine with the degerming soap, as well as the washing procedure using the normal blank soap on the test days. Variations as to time of washing, amount of soap used, physical strength applied to work up the lather and scrub the skin, the use

of brush, etc., will naturally produce wide variations in bacterial counts of organisms removed, and so each of these affecting factors must be properly controlled.

We next present in detail a complete outline of the test procedure such as we use and recommend to others for evaluating the degerming power of an antiseptic soap, together with a discussion of how the data obtained therefrom is collected and interpreted.

Outline of Method for Determining Skin-Degerming Powers

Purpose

THE basic purpose of this test is to determine the skin bacterial flora at various intervals, with special references to the lowering of the resident flora as brought about by the continuous use of "G-11" soap over a period of 5 to 10 days or more.

Procedure

1. Use at least 6 individuals as subjects per test. Keep clearly in mind the fact that two distinct types of soap are being used in this test. One is the antiseptic soap employed daily for the two weeks test period, to bring about the desired degerming effects. The other is plain soap used where the wash water is collected in the various basins for determining the counts of the bacteria removed. These latter applications of plain soap should not be made until at least two hours has elapsed since the prior use of the "G-11" soap.
2. Each series of tests should be started on a Monday A.M. when, following the first day washing test, the subject should start to use the "test-soap" for a period of two weeks continuously (at least 3 times daily). Bacterial count tests are to be made on 4 days during the two weeks period, as described in detail below, using "blank soap" only for this purpose.
3. In the "bacterial count" or "washing" test, three basins are used. These are equivalent to the 1st, 4th and 5th basins of a

"Price series" of hand-washing tests. Enamel or aluminum pans of about 4,000 cc. capacity are preferred. Tap water may be used (2,000 cc. per basin) provided tests have been made to insure that the water after being placed in the basins (properly cleansed) will contain less than 10 bacteria per cc. before it is used for any washing purposes. Sterile water and sterile basins, of course, would be the ideal; but to save time and cost the above is satisfactory for this test, provided counts are made on the water before using and these subtracted from the counts as found after washing, to get the actual counts of the bacteria removed from the hands by the washing process in the basins.

4. The detailed procedure for the "washing test" follows:
 - a. Roll sleeves up to elbow.
 - b. Add 2,000 cc. of lukewarm water from the tap into the "sterilized" first basin. Remove 2-1 cc. samples by means of a sterile pipette and plate same in agar for getting the blank bacterial count of the water.
 - c. Moisten the hands, only up to wrist-line, then apply blank soap (containing no germicidal material) for 15 seconds, followed by a thorough lathering and washing for 60 seconds, collecting all of the water in the basin. Rinse off both hands as thoroughly and completely as possible into the basin, allowing 15 seconds for this process.
 - d. The hands are then rinsed off lightly in running lukewarm tap water. The latter is discarded as far as collecting for counting purposes is concerned.
 - e. Two more washings are then carried out successively "under the tap," but the water therefrom is not collected or tested. Also, for these two washings, the area covered should extend three-fourths the way up the arm to the elbow.
 - f. Subject should then move to the 4th basin containing 2,000 cc.

of lukewarm tap water and carry out a washing process exactly as he did in the 1st basin above (pp. b, c, d).

g. Subject then moves to 5th basin and again carries out a similar washing procedure.

h. Immediately after subject has finished washing and rinsing in each respective basin, two 1 cc. and two 0.1 cc. samples of the 2,000 cc. wash-water in the basin are removed and each placed into a separate sterile petri dish, to which is then added immediately 15-18 cc. of nutrient agar, containing 1 per cent normal horse-serum as an antidote, at 42-45°C., mixing thoroughly by rotating, allowing to cool and harden, and incubating same at 37°C. for a period of 48 hours. At the end of this time the number of colonies present, indicating the number of bacteria per aliquot removed, are determined by means of a Quebec colony counter. The counts thus obtained are multiplied by 2000 for the 1 cc. samples, and 20,000 for the 0.1 cc. ones to get the total numbers removed.

i. Before removing the aliquot samples, the 2,000 cc. of wash-water should be mixed thoroughly by stirring with the sterile pipette to be used for withdrawing first the 0.1 cc. and then the 1.0 cc. samples. Remember to use a sterile pipette for each basin.

j. This same removal of aliquots, plating, and counting procedures is carried out in the 4th and 5th basin; as has just been described for Basin 1.

5. Tests as outlined in paragraph 3 and 4 above should be carried out on the first Monday, when the test starts and before the "test-soap" has been applied for the daily (3 times) use of the latter over the two weeks period; then repeated on the 5th day (Friday, of the first week); and again on the following Thursday A.M. (before the "test-soap" has been used that day) and then on Friday A.M. At least two hours should elapse between the time a wash

test with blank soap is made and that of the previous use of the test soap.

6. At the end of the two weeks' test period, each subject should stop using the "test-soap" and go back to the daily normal routine of using soap containing no germicide, for a period of two weeks. Washing tests as described in paragraphs 3 and 4 above should be run on the respective Fridays of these two weeks. When the bacterial counts show that the subjects have "returned to normal," they may be used again for another series of tests. Emphasis is placed upon the necessity of determining this fact of "back to normal" before the individual in question is utilized again as a test subject. The reasons for this requirement are obvious.

Recapitulation and Results

THUS, the essential data used as the guide in determining the efficacy of "G-11" soap in reducing the resident bacterial flora of the skin comprises:

1. The 1st, 4th, and 5th basin counts of the normal first day

transient and resident flora.

2. The 1st, 4th and 5th basin counts at the start of the fifth day of daily use of the test soap ("G-11").
3. The 1st, 4th and 5th basin counts at the start of the ninth day of daily use of the test soap.
4. The 1st, 4th and 5th basin counts at the start of the 10th day (i.e., after 10 days use of the test soap).

It should be noted that these 9th and 10th day references are for the respective Thursday and Friday of the second week, assuming the test soap was used for five days (Monday through Friday) continuously the first week, then again for five continuous days (Monday-Friday) of the second week. A two day "lay-over" for the week-end will not harm the end results, provided care is taken to be sure that no materials are used on the hands or skin during that period which might remove the G-11. Thus, no germicidal substance other than the "test-soap" should be used over the week-end, nor at any other time during the two weeks of the testing. Keep solvents away from the hands also during the two weeks test period for the same reason.

If it is desired to gather additional information as to what is happening to the transient and resident flora at other intervals during the progress of one of these tests, naturally, other basins can be interposed and counts made following the procedure exactly as above. This is not necessary, however, for the basic purpose of this test. Likewise, similar tests may be run daily for the two weeks' period, instead of only on the above selected four days. This latter procedure may be deemed advisable especially when the first few runs are made using a new test subject, whose control data is not available.

As a guide for determining if your results have produced "good" data, we present the following over-all figures representing data as have been obtained from many tests carried out under the above outlined procedures:

Basin No. 1,
1st day: from 1,500,000 to 4,000,000
Basin No. 5,
1st day: from 900,000 to 2,400,000
Basin No. 1,
10th day: from 60,000 to 800,000
Basin No. 5,
10th day: from 36,000 to 480,000

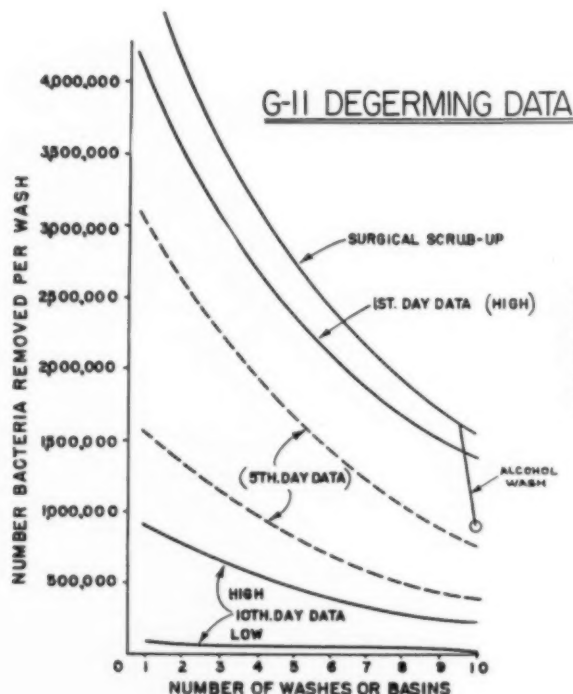
Thus, there should be a gradual decrease in count from 1st to 5th basins per test of around 25-40 per cent and a reduction of from 80 to 95 per cent in the respective count figures as found for the 1st and 10th days. The data for the 4th basin should coincide within 10-25 per cent with that as found for the 5th basins.

From these data, it is seen that the true criterion is one of percentage reduction, as well as actual count figures. When the original blank counts are low, the respective reduction counts are low, with a similar relationship existing when the original counts are high.

Thus, both figures and percentage reduction must be considered and correlated accordingly in order to interpret correctly the findings from any one set of test data.

From the washing process, we are able to obtain data on the bacterial removal, such as is required for use in determining the degerming efficacy of the antiseptic soap. A sample set of such data, compiled from averages of many tests, has been plotted and is now

(Turn to Page 73)



PHOSPHATES

IT IS an acknowledged fact that pure soap is an excellent detergent—in soft water. In hard water, however, it precipitates lime soap curds, causing a condition commonly known in the advertising vernacular as "tattle tale gray" or "bath tub ring." Figure 1 graphically illustrates the importance of this disadvantage, since few areas in the United States are supplied with really soft water.

This undesirable characteristic of soap stimulated extensive research which led to three vitally important discoveries.

First, it was found that certain inexpensive compounds could act as "builders" for existing soap powders. That is, they not only solved the problem of insoluble lime soaps, but increased the detergency as well. These builders were soda ash, (or washing soda) the sodium silicates, borax, modified soda, and trisodium phosphate. In

Originally builders for soap products to overcome hard water conditions, the phosphates now find use improving detergency in soaps and synthetics.

By M. V. Trexler

Technical Service Division,
Westvaco Chemical Division,
Food Machinery and Chemical Corp.

the last fifteen years, however, the newer and more effective complex phosphates have appeared and are rapidly gaining preference over the older builders in soap powders.

Next came the development of synthetic detergents—surface active agents with equal or better detergent power than soap in most cases. The ever-increasing use of such synthetics as alcohol sulfates, alkyl aryl sul-

fonates, sulfonated esters, and many others, has made their manufacture one of the fastest growing industries in America today.

Finally, the investigations showed that the addition of complex phosphates to synthetic detergent powders produced the best detergency characteristics of all.

Thus, the phosphate family has gained a position of major importance in both the natural soap and synthetic detergent industries. To find out how

Figure 1. Reprinted by Permission U. S. Geological Survey.



WEIGHTED AVERAGE HARDNESS, BY STATES, OF WATER FURNISHED IN 1932 BY PUBLIC SUPPLY SYSTEMS IN OVER 600 CITIES IN THE UNITED STATES

and why this situation exists, let us trace the development of these useful chemicals and examine their unique properties.

Trisodium Phosphate— The First Phosphate Soap Powder Builder

AS far back as 1900, TSP found ready acceptance—and still does—as a soap powder builder and filler. In addition to its low cost, TSP owes its popularity to its water softening ability and to its high pH which contributes to detergency. Because of these qualities, TSP is widely used not only as a builder in detergent powders but by itself as well. Oddly enough, those very advantages make TSP undesirable for certain applications. First of all, its pH of 11.8 makes solutions very harsh on the hands. Secondly, it softens water by precipitation of calcium and magnesium orthophosphates. This precipitation although of much lesser degree than that caused by soaps, is, nevertheless, a drawback. The effort to find a soap builder with properties superior to TSP ultimately led to the discovery of tetrasodium pyrophosphate.

Advantages of Tetrasodium Pyrophosphate

TSP, the first complex phosphate to be used in the detergent field, had been known chemically for many years, but was in very limited use. Some early converts had been using it in dishwashing mixtures, but it wasn't until Procter and Gamble incorporated it in "Oxydol" in 1937 that TSPP really came into its own. It is believed that "Oxydol" was the first nationally distributed household washing compound containing molecularly dehydrated phosphates to appear on the market.

The major advantages of TSPP over TSP were lower pH, water softening by sequestration instead of precipitation, and superior soil dispersing ability. The pH of TSPP is 10.2, approximately that of soap and therefore not considered too harsh on the hands. Softening water by sequestration means that the calcium, magnesium, and other metallic ions in hard water are held in a soluble complex,

leaving them unavailable for reaction with soap. Thus, if enough TSPP is used to sequester all of the calcium and magnesium in the water, no scum will result. In washing clothes, it will also redissolve insoluble soaps already deposited from previous launderings, thus freeing soap for sudsing. (A method for determining the calcium sequestering value of a polyphosphate has been reported by Hafford (1).

For the first time a way was found to inhibit calcium scum formation in a manner not previously possible when using soap in hard water. Furthermore, TSPP was found to be extremely stable under all conditions encountered in laundry practice—high alkalinity, elevated temperatures and long holding time. That is, it did not readily decompose into di-sodium orthophosphate, in which form the phosphate has no sequestering value and little or no detergent ability. Data substantiating the excellent stability of TSPP (as well as other complex phosphates) were presented by Bell (2) several years ago.

The use of TSPP in commercial soaps and detergent powders was a

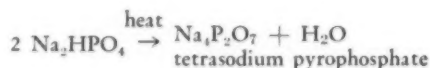
complex phosphates—even more effective than TSPP for some applications—have been discovered and within the last five years have become increasingly available in commercial quantities. They are sodium tripolyphosphate (STPP), sodium tetraphosphate, sodium hexametaphosphate and several other polyphosphates ranging in P_2O_5 content from 57.8 per cent (STPP) to 69.5 per cent (hexametaphosphate).

Chemistry of Complex Phosphates

BEFORE discussing the unique advantages of these more complex phosphates, let us first take a look at their chemistry and see how they differ from the simple orthophosphates.

All of these polyphosphates are made by molecular dehydration of the simple orthophosphates containing hydrogen—mono sodium phosphate (NaH_2PO_4) and disodium phosphate (Na_2HPO_4) or mixtures of the two. It is impossible to produce a complex phosphate from trisodium phosphate since it does not contain any acid hydrogen.

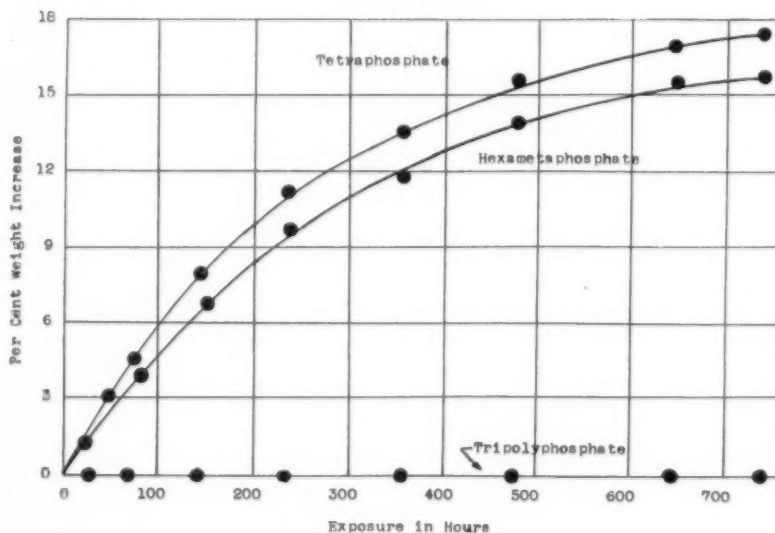
Here are the basic reactions:



major step forward in the industry. It was not, however, the greatest. Other

This reaction for making tetrasodium pyrophosphate simply involves

FIGURE II
Per Cent Weight Increase with Time of Sodium Polyphosphates
at 42% Relative Humidity
Room Temperature

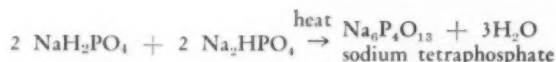


the molecular dehydration of disodium phosphate.

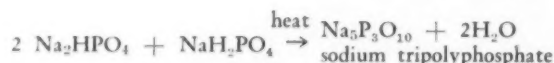
The commercial production of sodium hexametaphosphate is accomplished by fusing the monosodium phosphate, thus:



Fusion of an equimolecular ratio of mono- and di-sodium phosphate will, upon proper quenching, produce sodium tetraphosphate:



When a mixture of 2 mols. of disodium phosphate and 1 mol. of monosodium phosphate is heated (but not fused), sodium tripolyphosphate results:



TSPP and STPP are definitely crystalline compounds whereas all the complex phosphates of higher P_2O_5 content are referred to as glasses. Generally speaking, the phosphate glasses are not satisfactory as detergent builders because of their high degree of hygroscopicity, low pH, and instability in hot detergent solutions.

The relative hygroscopicity of STPP compared with two common commercial glassy phosphates is illustrated in figures II and III at two humidity levels. Under both conditions STPP remained free flowing, while

sodium tetraphosphate became wet in one to two days at the lower humidity. The sodium hexametaphosphate caked in fifteen days at the higher humidity

but had not yet caked at the conclusion of the test at the lower humidity. Obviously, to avoid serious caking of powdered detergents, a good detergent builder must not be hygroscopic.

STPP vs. TSPP

SODIUM tripolyphosphate shows several distinct advantages over TSPP, foremost of which are its superior calcium sequestering and water softening abilities. Coupled with these, its pH of 9.7 (close to that of soap), and its stability in solution contribute toward making STPP an excellent

builder for both soap and synthetic detergents.

Table I clearly shows the comparison of the properties of TSPP with those of STPP.

Phosphates in Synthetic Detergents

At the same time that detergent builders were being investigated, research was conducted to find a synthetic substitute for soap. Recent years have seen the successful development of synthetic detergents which have a distinct advantage over soap in hard water because no scum or lime precipitate ever formed. The reason for this phenomenon is that the calcium and magnesium salts of these organic surface active agents are soluble. It was discovered, however, that although these new detergents did a very good job on woollens, they did not clean cotton as well as a built soap (3,4). Investigation by several research laboratories resulted in a unique discovery—that sodium tripolyphosphate had a *synergistic* effect on the detergency of these new synthetics. That is, the detergency of the STPP built synthetic is *greater* than would be expected by adding the individual detergent power of each of the components. Synthetics of the alkyl aryl sulfonate type built with appreciable amounts of STPP were found by Hersberger and Neidig (3) to exhibit superior detergency characteristics on heavily soiled cotton, as compared with soap—even in soft water.

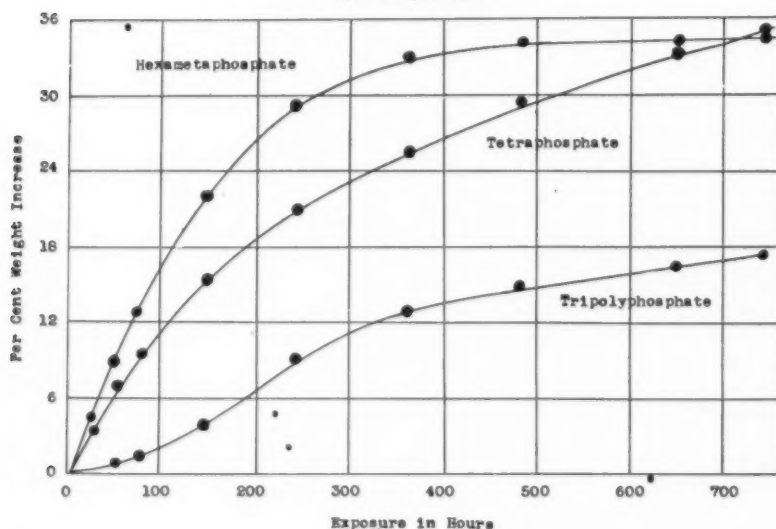
Synthetic detergents are securely established in the consumer market because of their singular characteristics in solving certain specific problems. Here then is a new and rapidly expanding field of application for the polyphosphates as detergent builders.

Potassium Phosphates in Liquid Soaps and Shampoos

UP to this point, we have directed our attention only to detergent powders, but there is another group of products which deserves equal consideration—namely, *liquid detergents*. Phosphates are also effective in improving the detergency of liquid soaps

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FIGURE III
Per Cent Weight Increase with Time of Sodium Polyphosphates
at 79.4% Relative Humidity
Room Temperature

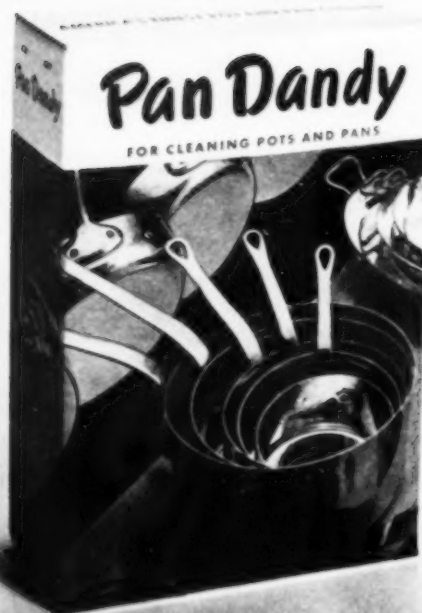




WHAT'S NEW?

"Car-Plate," new liquid wax for automobiles announced recently by S. C. Johnson & Son, Racine, Wis. The wax requires no buffing or polishing according to the maker. It is applied to a clean finish, then wiped off. After first application, light dirt and dust can be wiped from wax finish. Comes in 10 ounce and gallon containers for \$1 and \$4.50.

New cleanser for pots and pans introduced recently by Economics Laboratory, Inc., St. Paul, Minn., is "Pan Dandy." Product is packaged in four color process printed carton that features gloss varnish overprinted Kodachrome illustration. Since "Pan Dandy" is hygroscopic, a greaseproof paper is wax laminated to the board to insure correct moisture vapor conditions. Ohio Boxboard Co., Rittman, O., supplied the package for the newest Economics cleansing product.



New "Flobar" cream soap with Lucite "cake" and refill packet announced recently by Flobar, Ltd., New York. The Flobar "cake" and refill combination retail for \$1. The lucite "cake" dispenses the soap by means of the button at top. When not in use, the plastic cover fits over the "cake." The refill packet is emptied into the "cake" by cutting off the tip and inserting it into the "cake" while pressing the dispensing button.



New 1950 line of "Flit" insecticides and related chemical specialty items made by Esso Standard Oil Co., New York, have been repackaged in new red, white and blue design. In addition, "Flit" is available in aerosol form, with a larger amount of pyrethrum than formerly. One insecticide contains lindane.

New lightweight floor machine added recently to the line of floor maintenance equipment manufactured by Multi-Clean Products, Inc., St. Paul. The new "Lite 12" may be used for scrubbing, waxing, polishing and steel wooling of all kinds of floors by attaching one of several interchangeable brushes.



"Autobrite," new car polish containing silicones and announced recently by Boyle-Midway, Inc., division of American Home Products Corp., New York. The polish is said to be water-repellent and dirt repellent. In addition to recommending it for use on cars, the maker is suggesting it for general household use, too. 12 fluid ounces retail for \$1.



IMPROVE YOUR CLEANING COMPOUNDS with Wyandotte "high-light" Kreelon

In these competitive days, the appearance as well as the performance of a cleaning compound is important.

That's why more and more compounders are standardizing on Wyandotte "high-light" Kreelon in their formulations.

This superior detergent and wetting agent is white in color and makes a clear, practically colorless solution. Here's a simple test that strikingly demonstrates this quality. Simply dissolve a sample of Kreelon and one or a number of other detergents in separate beakers of water. Hold them up to the light. Note the clarity

of the Kreelon solution. Compare it with the hazy, "muddy" appearance of most other detergent solutions.

Wyandotte "high-light" Kreelon is made under rigid manufacturing specifications. It provides maximum detergency (soil removal and whiteness retention). And Kreelon contains a minimum of 40% active agent.

For complete data on the properties and applications of Kreelon, write us today.

"Kreelon" Reg. U. S. Pat. Off.

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SODA ASH • CAUSTIC SODA • BICARBONATE OF SODA
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HYDROGEN • DRY ICE • SYNTHETIC DETERGENTS • GLYCOLS
CARBOSE (Sodium CMC) • ETHYLENE DICHLORIDE • PROPYLENE
DICHLORIDE • AROMATIC SULFONIC ACID DERIVATIVES
OTHER ORGANIC AND INORGANIC CHEMICALS



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Samuel S. Fels is Dead at 90



SAMUEL S. FELS, 90, president since 1914 and active head of Fels Naptha Soap Co., Philadelphia, and believed to be the oldest soap maker in the industry, died June 23 in Temple University Hospital, Philadelphia, after a brief illness. The firm which he headed was founded about 75 years ago by his father, Lazarus, an immigrant from Bavaria.

A native of Yanceyville, N. C., Mr. Fels left school at 16 because of poor health and joined his father and two older brothers, Joseph and Maurice, in the soap manufacturing business. At 21, he became a partner in Fels & Co., and in 1914 was made president when his brother Joseph died. His brother Maurice is still living. Mr. Fels' wife, Jennie May, died in 1942, shortly after they had celebrated their 52nd wedding anniversary.

Mr. Fels celebrated his 90th birthday on February 16 of this year by having lunch with a few close friends. He was the subject of several feature stories in newspapers at the time.

In addition to his activity in the soap business, with which he was connected during his entire business career, Mr. Fels was long interested in civic affairs in Philadelphia. In 1948, he re-

ceived the city's award as the leading citizen of the year. He also founded the Crime Prevention Association of Philadelphia.

In the course of his lifetime it has been estimated that he donated more than \$40,000,000 to the cause of humanity. One gift was the \$200,000 Fels Planetarium at the Franklin Institute in Philadelphia. His principal philanthropy was the Samuel S. Fels Fund, which he established in 1935 to aid research projects, especially in the fields of medicine and government. Other projects sponsored by the fund include a research institute for the study of human development in a new laboratory near the campus of Antioch College, and research projects in photosynthesis and the protein molecule at the University of Chicago.

In 1937, he received the gold medal of the American Congress of Radiology for his contribution to the discovery of evidence on the operation and effects of the thymus gland.

At various times, Mr. Fels had served as director and president of the Philadelphia Orchestra Association, a vice-president of the Philadelphia Playgrounds and Recreation Association, a trustee of the Franklin Institute and the Wistar Institute of Anatomy.

C. G. Fox Succeeds Fels

Cyril G. Fox, vice - president and general manager of Fels & Co. since 1943, has been elected president, succeeding the late Samuel S. Fels, it was announced July 5.

Kelly in P&G Post

E. M. Kelly, Jr., has been appointed Newark district manager of Procter & Gamble Distributing Co., Cincinnati, the company announced July 1. He succeeds W. W. Brown who becomes sales director of the Philippine

Manufacturing Co., a P & G subsidiary in Manila.

Mr. Kelly first joined the com-



E. M. KELLY

pany's advertising department prior to World War II. Since completing four years service in the Navy he has been a member of the P & G sales force in New York, Newark and Syracuse districts.

Merrins Soap, Food Broker

William J. Merrins, for the past 28 years with Armour and Co., and recently eastern regional sales manager of the household soap division, with headquarters in New York, has just resigned to establish his own soap and food brokerage business. Mr. Merrins is operating under his own name with an office at 75 West St.

Approves Oil Import Bill

A bill to extend for another year the Government's power to control imports of fats and oils was passed by Congress and signed by President Truman on June 30, the date the previous law expired.

The Department of Agriculture then issued an order extending the controls indefinitely. Under the order, imports cannot be brought in without Government permit.

Lewis in Bon Ami Post

Stanley Lewis, formerly merchandising manager for Canada Dry Ginger Ale, Inc., New York, was recently named assistant general sales manager for Bon Ami Co., New York, according to a recent announcement by James A. Nelson, vice-president and general sales manager.

Grant Wage Increase

An agreement granting members of Local 186, Packinghouse Workers' Union (AFL), a 2½-cent hourly wage increase was signed recently by the Union and the North Coast Chemical & Soap Works, Seattle. The 20 members of the firm also were given a prepaid medical plan, effective July 1st.

N.E. Oil Chems. Meet

The third meeting of the newly organized Northeast Oil Chemists' Society was held June 6th at the Building Trades Employers Association, New York. A report on margarine production by John E. Slaughter, Jr., Girdler Corp., Louisville, was featured at the session. By laws of the association were presented by M. F. Lauro, N. Y. Produce Exchange, and accepted by the group. Peter Kalustian, E. F. Drew Co., Boonton, N. J., chairman of the society, announced that the next meeting will be held in October.

USDA Signs McCutcheon

Signing of a contract with John W. McCutcheon, private industrial consultant of New York, and the Production and Marketing Administration of the U. S. Department of Agriculture to study existing and potential market outlets for fats and oils of domestic agricultural origin, was announced recently.

Under the terms of the 12-month contract, Mr. McCutcheon, who is the co-author of "Soaps and Detergents" with Dr. E. G. Thomssen and writer of the monthly column "Soap Plant Observer" for *Soap & Sanitary Chemicals*, will interview representatives of business firms, evaluate marketing trends in production and distribution and will furnish preliminary

reports and a final report to the department. The immediate purpose is to furnish producers, processors,



JOHN W. McCUTCHEON

and users of fatty acids and synthetic detergents made from inedible fats and oils with information on uses and potential uses of these fats and oils and their products. The reports furnished under the contract will provide information on marketing channels for inedible fat products, price relationships between products made from fats and products made from competitive materials.

New P & G Tower in St. Louis

Procter & Gamble Co., Cincinnati, currently has under construction an addition to its St. Louis manufacturing facilities. The addition, which will increase the plant's capacity for producing granulated household cleaning products, will include a six-story high spray drying tower. The first three floors are to be enclosed with conventional brick walls and are to house the processing equipment and controls. Rising above this structure are three additional stories of open construction containing auxiliary tower equipment.

The new facilities are expected to cost more than \$350,000 and will increase the working staff of the plant by 25 percent.

The Procter & Gamble operation in St. Louis began in 1928, when the company purchased the assets of William Waltke Soap Co. About 250 persons are currently employed.

H. S. Brutton, P&G, Dies

Harry S. Brutton, organizer in 1931 of the public relations activities of Procter & Gamble Co., Cincinnati, with which firm he had been associated for 39 years, died in Cincinnati, May 31. He was 58. Mr. Brutton was active in Red Cross and Community Chest campaigns from 1919 until 1940. He was publicity chairman of the 1931 chest campaign and was secretary of local Red Cross Chapter from 1930-36. He was also chairman of publicity for the Cincinnati Institute of Fine Arts in 1928.

Surviving are his widow, two married daughters and a son, Harry S. Brutton, 3rd.

Tallow Denaturant Rule

An amendment to the regulations governing meat inspection of the U. S. Department of Agriculture permitting the use of No. 2 fuel oil as the denaturant of inedible rendered fats was proposed recently in an announcement by Charles F. Brannan, Secretary of Agriculture. The use of No. 2 fuel oil was suggested as a way of overcoming the problem of using denatured tallow that was objectionable for soap making. Earlier there had been a number of complaints from soap makers that the materials and methods of denaturing tallow were affecting the quality of the soaps, and in some cases the tallow was rendered unusable for soap making.

The amendment to section 14 of the meat inspection regulations, views on which were asked to be received by June 15, reads as follows: "14.2 Inedible rendered fats. Rendered animal fat derived from inedible or condemned materials and possessing the physical characteristics of color, odor and taste of an edible product shall be denatured to effectually distinguish it from an edible product either with low grade offal during the rendering or by adding to, and mixing thoroughly with, such fat denaturing oil, number 2 fuel oil, or buxine dissolved in a mixture of alcohol and pine oil or oil of rosemary."

Section 14.3 of the regulation would be revoked.

Chicago Shows Attract Soapers

MANUFACTURERS of soaps and sanitary chemicals concentrated in unusual numbers in Chicago recently for various conventions concerned with health and sanitation.

Joint meetings were held of industrial surgeons, nurses, dentists and hygienists at the Sherman Hotel, at which Armour & Co.'s industrial soap division exhibited antiseptic liquid hand soap, antiseptic powdered abrasive hand soap and "Dial" antiseptic bar soap. All were described as containing hexachlorophene (G-11), the non-toxic, non-irritating and odorless antiseptic agent.

Other exhibitors included:

John H. Breck Co., Springfield, Mass., displaying protective creams, hand cleaners, water resistant cream and work cream.

G. H. Packwood Mfg. Co., St. Louis., showing industrial skin cleaners with demonstrations of a new electronic soil detector and a "Suds-O-Meter," the former measuring the amount of soil remaining on the skin after washing and indicating it numerically on a dial. The "Suds-O-Meter" determines actual suds volume produced in a solution of cleaner.

Stepan Chemical Co., Chicago,

demonstrated their "pH 6" sulfated oil skin cleanser and "Compound F," a wetting agent for use in dust control.

Sugar Beet Products Co., Saginaw, Mich., featured a new cleaner-sanitizer, "SBS-50," for plant sanitation, also new industrial skin cleansers and dispensing equipment.

West Disinfecting Co., Long Island City, N. Y., had a large display of disinfectants, deodorants, liquid and powdered soaps and dispensers, products for control of industrial dermatitis, floor maintenance products and other items.

Other exhibitors of sanitation products included Davies-Young Soap Co., Dayton, O.; Great Stuff Products

A ten-day street washing demonstration in Philadelphia recently using a detergent solution in pressure flush trucks was part of that city's annual "Clean-Up, Fix-Up, Paint-Up, campaign. The campaign was officially opened by Mayor Bernard Samuel and Leo P. Gallen, Chief of the Bureau of Street Cleaning. The detergent, "Ultrawet" of Atlantic Refining, was used under the direction of Dr. Arthur B. Hersberger of that company. The street washing was confined to the main business district and was carried on nightly for the ten-day period, the first time an experiment of this type has been conducted over an extended period of time.

Co., West New York, N. J.; and Mine Safety Appliances Co., Pittsburgh, Pa.

Among speakers at sessions of the various medical groups were Dr. John J. Poutas, medical director, Lever Bros. Co., and two American Cyanamid Co. research workers, Wm. R. Bradley and D. O. Hamblin. Dr. Poutas discussed the importance of teamwork in industrial health programs, while the two American Cyanamid representatives talked on factors in safe use of parathion.

At the Midwest Safety Show, also at the Sherman, exhibitors included the Milburn Co., Detroit, Mich., G. H. Packwood Mfg. Co., St. Louis, Oil-Dri Corp. of America, Chicago, Mine Safety Appliances Co., Pittsburgh, Walter G. Legge Co., New York, and Hild Floor Machine Co., Chicago.

Speaking on "Chemical Hazards," Leo B. Post, senior chemical engineer, Victor Chemical Works, Chicago, said that while most people think that chemical injuries come from contact with the materials, the real hazard, in the majority of cases, lies in exposure to the processing machinery. Many accidents occur, he said, because of incorrect instructions to the worker for performing his tasks safely. He told how his company handles this problem and stated also, that the

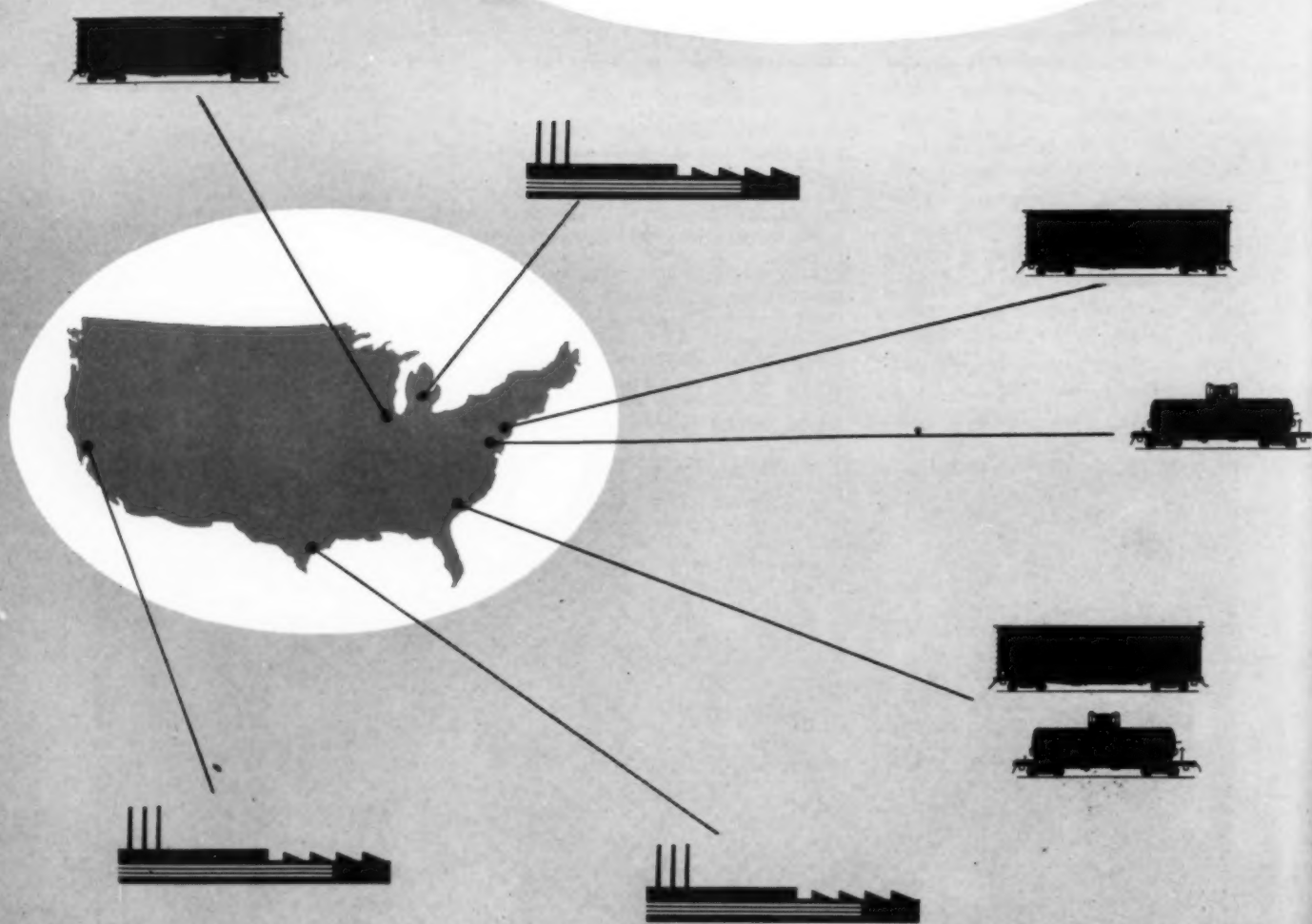


Dow Caustic Soda

serves the soap and sanitary field

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1. Three producing plants—in Michigan, Texas and California.
2. Caustic Soda Solution bulk tank terminal distributing facilities—Carteret, N. J. and Charleston, S. C.
3. Caustic Soda Solid, Flake and Ground Flake terminal distributing facilities—Chicago, Ill., Charleston, S. C., and Port Newark, N. J.



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CHEMICALS

INDISPENSABLE TO INDUSTRY
AND AGRICULTURE

Manufacturing Chemists Association of the U. S. has published over 36 data sheets on how to handle specific substances safely.

At the 20th annual convention of the Tri-State Hospital Assembly at the Palmer House, the following were among exhibitors: Hilliard Sales Co., St. Joseph, Mo.; Huntington Laboratories, Huntington, Ind.; Midland Labs., Dubuque, Ia.; Vestal, Inc., St. Louis, Mo.; Wyandotte Chemical Corp., Wyandotte, Mich.; H. Kohnstamm & Co., New York, and Hild Floor Machine Co., Chicago.

At a sectional conference of hospital laundry managers Phil Deegan, Chicago service manager for Kohnstamm & Co., talked on "The Hospital Laundry." Serving on a quiz program, members of the panel which answered questions by the laundry managers included Edwin Hahn, Cowles Chemical Co., and Carlyle G. Morton, laundry research div., of Swift & Co.'s research laboratories.

Other Chicago conventions, at which soap and sanitary chemical manufacturers exhibited included the Super Market Institute, National Restaurant Association and the Institute of Food Technologists.

Liberty Detergents Article

A Quiz-type article on soaps and detergents appears in the July issue of *Liberty* magazine. Covered in the article are the distinctions between soaps and detergents, types of detergents, efficiency of detergents for various types of washing as compared with soap, and information pertaining to the uses of soaps and detergents.

FTC Dismisses Web Case

The Federal Trade Commission announced recently it had dismissed without prejudice its complaint against Web Distributing Co., formerly located at Convent, N. J. The company was charged with misrepresenting the efficiency of "Pyroside" tooth powder. The record in the case, according to the F.T.C., disclosed that the contract under which Web acted as a distributor for the manufacturer of the dentifrice was terminated prior to the issuance of the complaint.

Bower Leaves Ayer

Maxwell Bower, since July, 1948, general sales manager of Harriet Hubbard Ayer division of Lever



MAXWELL BOWER

Brothers Co., New York, has rejoined Milkmaid, New York, as sales manager. Previously, he had been sales manager of the firm from 1938 until 1948.

New "Whiz" Tire Cleaner

"Whiz Lily Wyte Sidewall Cleaner" is the name of a new product recently announced by R. M. Hollingshead Corp., Camden, N. J. The cleaner which contains titanium dioxide is applied with a cloth and rinsed off with water. It contains no abrasive according to the manufacturer. The new product is being made available in pint and gallon cans.

Buys Coast Chem. Firm

The purchase of the Pacific Chemical plant of American Marietta Co. of Los Angeles by Wyandotte Chemicals Corp., Wyandotte, Mich., was announced recently.

Kohnstamm at Linen Show

H. Kohnstamm & Co., Inc., New York, was the soap industry's sole representative in the trade show staged in connection with the 38th annual convention of the Linen Supply Association of America, in Chicago, recently. Under direction of E. W. Mayer, general manager of the western division, and Edward Kahn, Chicago district sales manager, the 100-year-

old company exhibited its laundry supply lines, including soaps, detergents, builders, bleaches, blues, sour, starches, etc. Among features scheduled on the convention program was a showing of the Procter & Gamble Co.'s motion picture, "Leave Less to Luck."

Soap Co. Incorporates

The filing of articles of incorporation with the office of the secretary of state of New York, at Albany, June 9, was done recently for American Transparent Soap Co., for the manufacture of soaps, washing fluids and washing powders. Capital stock was listed at \$20,000. Directors include Adolphe Barere, 8 W. 90th St., New York, Paul S. Lawrence and Roy J. Maccabee, both of 39 Broadway, New York.

Heads Paper Test Work

A group of paper testing procedures authorized by a technical committee headed by Charles E. Carlson of Colgate-Palmolive-Peet Co., Jersey City, N. J., was announced recently by the Packaging Institute, New York.

Dr. Preston of P & G, Dies

Dr. Walter Creigh Preston, authority on chemical research for Procter & Gamble Co., Cincinnati, died after a short illness on June 12, in Holmes Hospital, Cincinnati. He was 54 years old. Noted for his development of silica gel, a widely used drying agent, Dr. Preston, was a nephew of John W. Davis, former U. S. ambassador to Great Britain. He was also known for his work with detergents. He had been associated with Procter & Gamble since 1923, for some years with its patent department. Dr. Preston was a graduate of Washington and Lee University.

Shea Joins Agency

Dan E. Shea, formerly with Lever Brothers Co., New York, and Armour & Co., Chicago, recently joined Cecil & Presbrey, Inc., New York advertising firm, as director of merchandising.

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from the Givaudan research laboratories

essential oils that duplicate nature's best
(in everything but the cost!)

Givaudan's synthetic essential oils not only duplicate nature's best efforts, but surpass them in uniformity—at a cost far below the cost of natural oils. Why not profit by the independence and economy these Givaudan products offer you? We suggest:

* for vetivert—VERTONE

Recommended for use with the natural in a mixture in which vetivert itself would be required in proportions as low as 10%. VERTONE blends extremely well with vetivert oil. The combination has remarkable lasting power and is excellent for use in soaps and in the perfuming of creams and powders.

* for geranium—GERANIUM SYNTHETIC 1086

Recommended as a total replacement, particularly for geranium Bourbon whose deep floral odor is excellently reproduced.

* —GERANIUM SYNTHETIC GIVCO

A very inexpensive geranium material whose note is closely similar to the Algerian oil.

* for patchouli—PATCHOL

Lends itself harmoniously to blending with oil of patchouli. The combination is very stable in soap and will not induce discoloration.

*Write for samples and full information on these
and other timely Givaudan synthetic essential oils.*

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H. I. Thatcher Dies

Herbert I. Thatcher, 68, founder of T. & B. Soap Manufacturing Co., Milwaukee, died June 26. He had operated the soap company from 1920 until 1945, when he retired. His son, Ellery T., now operates the business. A native of Fort Atkinson, Wis., Mr. Thatcher moved to Milwaukee at 17. He is survived by his wife, Paula; a brother, Delbert; three sisters and his son.

AASGP Meeting Dates

The 24th annual meeting of the Association of American Soap & Glycerine Producers, Inc., will be held Wednesday, January 31, and Thursday, February 1, 1951, at the Hotel Plaza, New York, scene of the 1950 meeting.

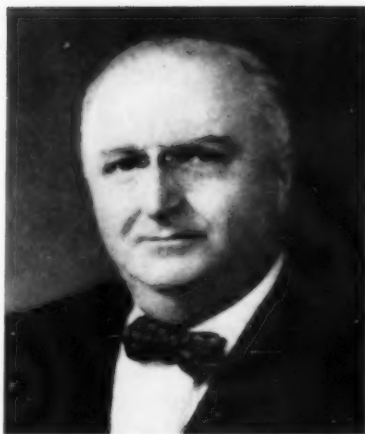
Solvay Still on Strike

A strike involving 3,000 employees of Solvay Process Division of Allied Chemical & Dye Corp. in Syracuse, N. Y., Detroit, and Baton Rouge, La., began June 13, reportedly over a \$100 pension plan.

Late in June, the mayor of Solvay, Stanley W. Major, a master welder at the plant, called on the representatives of the union, Local 12,457 of the United Mine Worker's District 50 and management to end the strike. Negotiations are continuing, although neither company nor union would reveal details of the dispute.

Boston BIMS Golf Winners

Winners at the first golf outing of the 1950 season of the BIMS of Boston, held June 7, at Woodland Golf Club, Auburndale, Mass., included: C. T. Hoya, Rexall Drug Co.; Arthur Perry, Pigments Division, E. I. du Pont de Nemours & Co.; T. B. Howell, United Consumers, Inc.; J. W. Monahan Aetna Casualty & Surety Co.; J. P. Kelly and Harold Ingham,



James J. Kerrigan, recently elected president of Merck & Co., Rahway, N. J., has been with the firm since 1907. He succeeds George W. Merck, who has become chairman of the board. Mr. Kerrigan has been a vice-president and director since 1927.

Ingham of Boston.

Door prizes were won by Steve Mathews of Brockway Glass Co. and C. P. Seaverns of Howe & French, Inc.

N. Y. BIMS to Golf

The next golf tournament of the BIMS of New York will be held Tuesday, July 18, at Wheatley Hills Golf Club, East Williston, Long Island.

Tesco Expands Facilities

The absorption of the chlorine and ammonia cylinder filling operations in the South of Mathieson Chemical Corp., Baltimore, by Tesco Chemicals, Inc., Atlanta, was announced recently by T. E. Schneider, president of Tesco.

The purchase includes all of Mathieson's southern filling equipment and cleaning and inspection facilities, which have been moved to Tesco's plant. Technical personnel have become part of the Tesco staff.

Officers and directors of the Quarter Century Club of Fritzsche Brothers Co., New York, at the New York Athletic Club, June 1, at a dinner to honor John H. Montgomery, vice-president, on his 25th anniversary with the firm.

Armour P. R. Man Dead

Ralph D. MacManus, widely known public relations director of Armour & Co., Chicago, died recently at Orlando, Fla. Mr. MacManus, who was 61 years old, became associated with Armour in 1917, following a career as editor at different times of two down-state Illinois newspapers.

Pacific Coast Borax Moves

As of June 30, Pacific Coast Borax Coast is located at 100 Park Ave., New York. The firm was formerly at 51 Madison Ave.

Chem. Salesmen Golf

The July golf outing of the Salesman's Association of the American Chemical Industry, Inc., was held at Bonnie Briar Country Club, Larchmont, N. Y., Tuesday, July 11.

The August outing is to be held on the 16th at Montclair (N. J.) Country Club, and the final outing of the season will be held at Westchester Country Club, Rye, N. Y., Sept. 12.

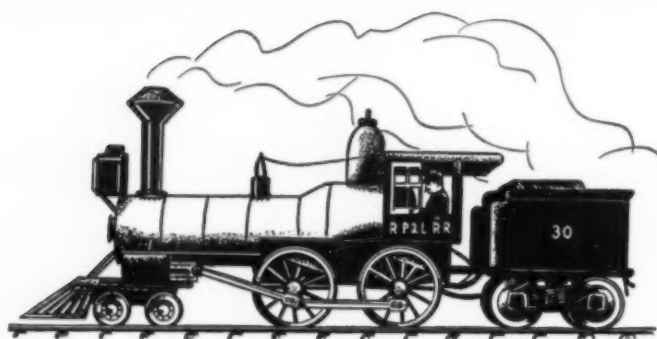
L. C. Bernens Dies

Leonard C. Bernens, 59, secretary of Andrew Jergens Co., Cincinnati, died July 1, at his home. He joined the company in 1910 as an office boy. He was appointed secretary and elected a director 20 years ago.

New Phosphorus Plants

Westvaco Chemical Division of Food Machinery & Chemical Corp., New York, will construct a third electric furnace unit for the manufacture of elemental phosphorus at its Pocatello, Idaho, plant, where two phosphorous furnaces are presently in operation. A plant for the processing of phosphorus into the usual grades of soluble phosphates is being erected at Lawrence, Kans.





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ANIMAL FATS

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Oleo Stearine
Lard Oil
Neatsfoot Oil

Grease
Tallow
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FATTY ACIDS

Red Oil Tall Oil Tallow
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ALKALIES

Caustic Soda, Solid, Liquid, and Flake
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Quadrafos Granular and Beads—a stable
polyphosphate for water conditioning and
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Durrer Visits Europe

Ernest R. Durrer, executive vice-president of Givaudan-Delawanna, Inc., New York, sailed June 28 on the *Ile de France* for a two-month business trip in Europe. He is to visit Switzerland, France and Italy. While in Europe Mr. Durrer will study new products emanating from the Givaudan laboratories in Geneva and Paris in order to determine their value for the American market.



Kirkman to Jersey City

The transfer of all operations of the plant of Kirkman & Sons Division, 215 Water Street, Brooklyn, to the main plant of Colgate-Palmolive-Peet Co., Jersey City, N. J., was to be effected August 1. The Brooklyn plant of Kirkman was sold five years ago, and was leased for the intervening period. With the expiration of the lease, it was decided that the smaller Kirkman operation could be consolidated at the main plant of Colgate-Palmolive-Peet Co. in Jersey City, N. J.

Kirkman manufactures yellow bar laundry soap, flakes, borax soap, etc., all of which will continue to be made in Jersey City.

AOCS Fall Meeting

The fall meeting of the American Oil Chemists' Society is to be held Tuesday through Thursday, Sept. 26-28, at the Sir Francis Drake Hotel, San Francisco. E. B. Kester of the Western Regional Research Laboratory, Albany, Calif., is general chairman.

The three-day meeting, at which technical papers will be presented, is to be followed by a fourth day given over to plant trips and sightseeing.

The program committee is composed of H. S. Olcott, WRRL, Albany, Calif., chairman; F. D. Snell, Foster D. Snell, Inc., New York; J. C. Cowan, Eastern Regional Research Laboratory, Philadelphia; T. H. Hopper, Southern

Regional Research Laboratory, New Orleans; Willy Lange, Procter & Gamble Co., Cincinnati; J. C. Konen, Archer-Daniels-Midland Co., Minneapolis and C. E. Morris, Armour & Co.

Reject. Mass. Coupon Bill

A bill which would have practically eliminated the use of coupons in Massachusetts was voted down in the state's legislature, recently. The proposed legislation, House Bill 2559 would have required an expiration date on all coupons, with a penalty of six per cent to be paid on the value of all coupons not redeemed within 30 days. The bill further proposed a fine of \$500 for violations.

Heyden Sells Rumford

The acquisition of the Rumford division of Heyden Chemical Corp., New York, by Hulman & Co., Terre Haute, Ind., baking powder firm, was announced recently. The Rumford, R. I., firm had been bought in 1948 by Heyden.

Lucking in Anatara Post

W. H. Lucking, who has been a member of the sales staff of Anatara Products Division of General Aniline & Film Corp., New York, since 1948, was recently appointed assistant sales manager of the division. He is making his headquarters at 444 Madison Ave., New York.

Dow Buys Bush Aromatics

The purchase by Dow Chemical Co., Midland, Mich., of Bush Aromatics, Inc., New York, was announced last month by Leland I. Doan, president of Dow. The newly acquired firm became a division of Dow effective July 1. It is operating under the direction of Dr. Arthur Behr, a director of aromatic research at Dow for the past 10 years. Ernest Briggs, Jr., present aromatic sales head at Dow, is in charge of sales.

B. T. Bush, president of Bush Aromatics, and for many years associated with the perfuming materials industry, is continuing to serve in an

advisory capacity. His sons, Edward A. and B. T. Bush, Jr., continue as sales representatives of the new division.

The division will be the exclusive representatives in the United States, Canada and Cuba of the French firm, Synarome of Paris, which the Bush organization represented.

Sales offices are continuing at the former New York address of 136 Liberty St., and a plant with warehousing facilities is located at Lackawanna Warehouse, 629 Grove Street, Hoboken, N. J. New and improved laboratory facilities are being set up at the Hoboken plant.

B. T. Bush, president of Bush Aromatics, with Ernest Briggs, Jr., aromatic sales head at Dow, and Dr. Arthur Behr, director of aromatic research at Dow for 10 years.



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OIL MIMOSA No. 615	@ \$2.50 per lb.
OIL BOUQUET S No. 61	@ 5.75 per lb.
OIL JASMIN No. 613	@ 2.50 per lb.
OIL BOUQUET C No. 613	@ 2.50 per lb.

For LIQUID SOAP

OIL BOUQUET E.C. No. 618 Water Soluble	@ \$2.75 per lb.
OIL BOUQUET E.T. No. 618 Water Soluble	@ 2.25 per lb.
OIL HONEYSUCKLE No. 61 Water Soluble	@ 2.85 per lb.
OIL NARCISSUS No. 614 Water Soluble	@ 2.25 per lb.

SHAMPOO ODORS

OIL BOUQUET H.O. No. 8267 Water Soluble	@ \$2.00 per lb.
OIL BOUQUET APPLE BLOSSOM No. 8240	@ 2.25 per lb.
IMITATION ALMOND BOUQUET No. 8262 Water Soluble	@ 2.00 per lb.
OIL CLOVER No. 888	@ 4.75 per lb.

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As of July 3, 1950

FATS and oils prices without exception currently are quoted at levels below those of about a month ago. Although the initial news of fighting in Korea produced a rise in the price of coconut oil, it is now selling for less than it did late in May. Copra is quoted at the same figure as on May 29.

Tallow at its present price of $5\frac{1}{8}$ cents is down approximately one and one-eighth cents from the price shown on this page last month. One year ago tallow was selling for $5\frac{7}{8}$ cents a pound. Tallow is at the lowest level of the year, which may mean a further cut in soap prices.

Coconut oil is currently listed at $13\frac{3}{4}$ cents a pound, crude basis, Pacific Coast, as compared with 14 cents late in May. Under the impact of the first news of the fighting in Korea, coconut oil went up about three quarters of a cent per pound, but has remained at the present quotation for the last three or four days.

Copra, too, at \$180 a ton, Pacific Coast, is unchanged from last month's figure, but is up slightly, probably as a result of the hostilities in the Pacific.

The vegetable oils are uniformly lower in price than they were about a month ago. Cottonseed oil is currently listed at $13\frac{5}{8}$ cents a pound, as contrasted with $14\frac{5}{8}$ cents earlier. A year ago, cottonseed oil was selling for around $10\frac{1}{2}$ cents a pound. Corn oil moved lower during the past month to its current price of 14 cents, a decline of one and one-quarter cents from the late May quotation. The price on approximately this date last year was $10\frac{7}{8}$ cents. Feeling the general sloughing off of prices in recent days, soybean dropped from $13\frac{1}{8}$ cents to its current price of $12\frac{1}{4}$ cents. The current price, however, is considerably above the July, 1949 figure of nine

cents. Peanut oil at $14\frac{1}{8}$ cents, while down from a month ago, is only off by five-eighths of a cent. At this time a year ago peanut oil was quoted at $12\frac{1}{4}$ cents a pound.

As a result of the war news and a tightening supply of hogs, Chicago reports told of higher prices on lard futures.

Heavy demands for fats and oils in the first six months of the current season have not only absorbed additional supplies from a larger domestic production, but have also resulted in a more rapid rate of disappearance than in the comparable months of the 1948-49 season, according to a recent summary of the fats and oils situation published by the Department of Commerce. From October, 1949, through March, 1950, output of the major edibles was 340 million pounds larger than a year earlier, but combined domestic disappearance and exports were more than 500 million pounds greater. Stocks of all edible fats and oils on March 31, 1950 were 150 million pounds lower than on the same date in 1949.

Exports of fats and oils from the United States continued large during the first three months of this year, the 577 million pounds shipped out representing an increase of nearly 15 per cent over the January to March, 1949, period. There was not much change in total imports, hence net exports of 308 million pounds were one-third greater than a year earlier. It is likely that exports in April-June will be below those made in the same months of 1949, when the greatest upsurge in exports occurred following the termination of export controls. Shipments of copra and coconut oil from the Philippine Republic during the January to April, 1950 period amounted to 171,000 long tons in terms of copra, two per cent more than were exported a year earlier. The quan-

tity consigned to the United States was 128,000 tons, 75 per cent of the total as against 83,000 tons, 49 per cent, in January-April, 1949.

Production of inedible tallow and grease this season has been somewhat more favorable than in the corresponding months of the 1948-49 season. About 1,089 million pounds were produced through March, representing a three per cent gain over output a year earlier. Although increasing somewhat in January-March, domestic disappearance in the first six months of this season was slightly lower than in October-March, 1949. Exports of inedible tallow and grease are continuing at a relatively heavy rate, with 188 million pounds shipped out in October, 1949-March, 1950, as against 117 million pounds in the comparable period of 1948-49. Factory and warehouse stocks on March 31, 1950 were 373 million pounds, only slightly lower than the 385 million held a year earlier.

Although larger quantities of copra and coconut oil were imported into the United States in the first quarter of 1950, compared with a year earlier, less of the oil has been utilized. Imports of copra and coconut oil amounted to 180 million pounds (oil equivalent), an increase of 42 million pounds, whereas disappearance of 99 million pounds was six million pounds less. Processors crushed 87,000 tons of copra in the first quarter of 1950 as compared with 73,000 tons a year ago. Coconut oil stocks, which include Government holdings increased further to 192 million pounds on March 31, 1950, nearly 120 million pounds more than a year ago.

Carnauba wax prices increased in recent days about one cent a pound, bringing No. 3 crude up to the 75-77 cents range. Essential oils also moved higher, with advances recorded for both geranium and vetiver. Ceylon citronella was also higher.

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NEW

TRADE MARKS

THE following trade-marks were published in the June issues of the *Official Gazette* of the United States Patent office in compliance with Section 6 of the Act of February 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, a fee of ten dollars must accompany each notice of opposition.

Cetylclide—This for germicidal concentrate. Filed July 4, 1947 by Curvite Products, Port Chester, N. Y. Claims use since May 6, 1947.

The following trade marks are published in compliance with section 13 (a) of the Trade Mark Act of 1946. Notice of opposition must be filed within 30 days of publication and a fee of \$25 must accompany each notice of opposition.

Microbomb—This for vaporizer used for the reduction of airborne bacteria. Filed Mar. 30, 1949 by Carand Corp., Racine, Wis. Claims use since Mar. 1, 1949.

O-Cedar—This for insecticides. Filed July 24, 1947 by O-Cedar Corp., Chicago. Claims use since June 1, 1907.

Dynacide—This for insecticides and fungicides. Filed Dec. 3, 1948 by William M. Stieh & Co., Teaneck, N. J. Claims use since Nov. 15, 1948.

Infectaside—This for air spray to destroy air-borne infectious microbes. Filed Mar. 7, 1949 by Infectaside Co., Washington, D. C. Claims use since Feb. 28, 1949.

Octalox—This for insecticides. Filed Aug. 19, 1949 by Julius Hyman & Co., Denver, Colo. Claims use since July 22, 1949.

Atolak—This for detergent powder and for liquid cleaner for metal and lacquered surfaces. Filed Dec. 7, 1948 by Atomix, Inc., Mount Cuba, Del. Claims use since Aug. 24, 1948.

Sani-Septic—This for rug and carpet cleaning. Filed Oct. 11, 1948 by Henry C. Hartenbach, St. Louis, Mo. Claims use since Oct. 1, 1948.

Py-Amo—This for dentifrice. Filed June 5, 1948 by Pyclope, Jersey City, N. J. Claims use since June 1, 1948.

Waldorf—This for bubble bath preparation. Filed July 21, 1948 by General Products, Chicago. Claims use since Nov. 1940.

Ammonite—This for dentifrice. Filed Feb. 28, 1949 by Stanley Drug Prod., Portland, Ore. Claims use since Apr. 1, 1948.

Lykette—This for liquid deodorant. Filed May 18, 1949 by Iodent Chemical Co., Detroit. Claims use since Mar. 7, 1949.

Lusterbrite—This for dishwashing compound. Filed Nov. 13, 1948 by Apothecaries Hall Co., Waterbury, Conn. Claims use since 1942.

Pert—This for liquid cleaning fluid. Filed Jan. 8, 1949 by Diversey Corp., Chicago. Claims use since Jan. 1935.

Po-quat—This for cleansing and sanitizing preparation containing a quaternary ammonium compound. Filed Jan. 17, 1949 by Milk Plant Specialties Corp., Rochester, N. Y. Claims use since Dec. 31, 1948.

On-Off—This for waterless automobile and hand cleaner. Filed Jan. 24, 1949 by Amalgamated Sales, San Francisco. Claims use since Nov. 23, 1948.

Quat Shots—This for water soluble detergent compounds for use in mechanical dishwashing. Filed Jan. 27, 1949 by Quatomatic, Memphis, Tenn. Claims use since Oct. 8, 1948.

Beu Tress—This for shampoos. Filed Mar. 18, 1949 by New York Hair Co., New York. Claims use since Mar. 1, 1949.

Suavitor—This for fungicide. Filed Feb. 6, 1948 by Ward Blenkinsop & Co., London, England. Claims use since May 1947.

G-11—This for substance having the chemical formula, 2,2'-dihydroxy-3', 5', 6'-hexachloro diphenyl methane, and being suitable as the active ingredient in bactericidal preparations. Filed Feb. 27, 1948 by Sindar Corp., New York. Claims use since June 5, 1939.

Video-White—This for laundry disinfectant and bleach. Filed Oct. 20, 1948 by Felice Prod. Co., Chicago. Claims use since Apr. 1, 1948.

Pyray—This for fluorescent dye. Filed May 6, 1949 by Colgate-Palmolive-Peet Co., Jersey City, N. J. Claims use since Oct. 6, 1948.

An-Amo—This for tooth powder. Filed Apr. 6, 1949 by Anthony Products Co., New Rochelle, N. Y. Claims use since October 1948.

Mirro-Glaze—This for cleaner for automobile bodies and fenders. Filed Sept. 2, 1948 by Lustre Prod. Corp., Detroit. Claims use since September 1946.

Tumble Suds—This for soap powder. Filed Jan. 17, 1949 by Essential Chemicals Co., Milwaukee, Wis. Claims use since Jan. 7, 1949.

Li-Quat—This for cleansing and sanitizing preparation containing a quaternary ammonium compound. Filed Feb. 15, 1949 by Milk Plant Specialties Corp., Rochester, N. Y. Claims use since Jan. 26, 1949.

Fac Grass—This for liquid chemical preparation for the treatment of athlete's foot. Filed Mar. 4, 1949 by Arthur H. Seigfried, Sand Springs, Okla. Claims use since Jan. 13, 1949.

Enbin—This for preparation for the control of head and body lice. Filed Mar. 12, 1949 by William Cooper & Nephews, Inc., Chicago. Claims use since Oct. 6, 1948.

Sport-O—This for ointment for athlete's foot. Filed Mar. 14, 1949 by Shutack's Drugs, Nesquehoning, Pa. Claims use since Feb. 28, 1949.

Peb-Ammo—This for ammoniated dentifrice. Filed May 21, 1949 by Lehn & Fink Products Corp., Bloomfield, N. J. Claims use since May 3, 1949.

Dorex—This for air diffusers and odor adsorbers. Filed Mar. 5, 1948 by W. B. Connor Engineering Corp., New York. Claims use since Sept. 26, 1938.

Epheta—This for water scale remover for use in water boilers. Filed Aug. 20, 1948 by Epheta Corp., Detroit. Claims use since July 29, 1948.

Neem—This for medicinal soaps. Filed Dec. 31, 1948 by Neem-Kay Co., New York. Claims use since Dec. 24, 1948.

Engo—This for pesticide for veterinary use. Filed Aug. 3, 1948 by Fort Dodge Laboratories, Inc., Fort Dodge, Ia. Claims use since July 26, 1948.

G-4—This for substance having the chemical formula, 2,2'-dihydroxy-5,5'-dichloro diphenyl methane as active ingredient in bactericidal and fungicidal preparations. Filed Feb. 27, 1948 by Sindar Corp., New York. Claims use since Sept. 1, 1938.

Glycocilin—This for sterilization grade of triethylene glycol for vaporization into the atmosphere. Filed Nov. 16, 1948 by Glycolizer Corp., New York. Claims use since Oct. 4, 1948.

Odorstroy—This for chemical solutions containing metazene for eliminating offensive odors from the air. Filed Aug. 9, 1949 by American Instrument Co., Silver Spring, Md. Claims use since Aug. 1, 1949.

Eastern States—This for hand operated dusters for applying powdered insecticides, etc. Filed Nov. 24, 1948 by Eastern States Farmers' Exchange, West Springfield, Mass. Claims use since Mar., 1935.

"Dust-Proof"—This for floor and furniture oil and polish. Filed July 5, 1947 by Norman C. Hayner

(Turn to Page 139)

12

BASIC CHEMICALS*ALL produced by***MATHIESON**

PRODUCED BY OTHER CHEMICAL COMPANIES

PRODUCT	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
(MATHIESON)																		
SULPHURIC ACID	✓	✓				✓			✓			✓			✓	✓		
PROCESSED SULPHUR	✓												✓			✓		
SODA ASH	✓			✓						✓	✓						✓	✓
CAUSTIC SODA	✓			✓	✓		✓	✓	✓	✓	✓				✓	✓	✓	✓
BICARBONATE OF SODA	✓			✓						✓	✓							✓
AMMONIA	✓		✓		✓				✓			✓		✓	✓			
AMMONIUM SULPHATE	✓		✓									✓						
NITRATE OF SODA	✓		✓															
CHLORINE	✓			✓	✓		✓	✓	✓	✓	✓				✓	✓	✓	✓
CALCIUM HYPOCHLORITE	✓								✓	✓								
SODIUM CHLORITE	✓																	
CHLORINE DIOXIDE	✓																	

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SERVING INDUSTRY, AGRICULTURE AND PUBLIC HEALTH

Vet. Shaving Cream Bids

The following bids were received on an unspecified quantity of shaving cream in a recent opening for miscellaneous supplies by the Veterans Administration Procurement Division, Washington, D. C.: E. R. Squibb & Sons, New York, items 1 to 3, and 1a to 3a, \$2.40, 3 1/8 oz.; Colgate-Palmolive-Peet Co., Jersey City, items 1 to 3, and 1a to 3a, \$2.117, 2 3/8 oz.; Barbasol Co., New York, items 1 to 3, and 1a to 3a, \$1.44; Comfort Mfg. Co., item 1, 69 cents, 2, 72.5 cents; 3, 77 cents; 1a, 69 cents; 2a, 72.5 cents; 3a, 77 cents; at 2 oz.; and Lambert Pharmaceutical Co., Newark, N. J., items 1 to 3, 7 cents, 2-oz. tube; and Gillette Safety Razor Co., New York, item 1 to 3, 15.162 cents, 2.5 oz.; 1a to 3a, 17.162 cents.

Post Office Supply Bids

In a recent opening for miscellaneous supplies by the Post Office Dept., Washington, D. C., for an unspecified quantity of automobile soap, the low bid on all items was submitted by Fischer Industries, Cincinnati, with bids of 6.59 cents on item 1, 5.26 cents on 2, 5.04 cents on 3, and 4.42 cents on 4. Schaeffer Mfg. Co., St. Louis, placed bids of 7 cents on item 1, 5.9 cents on 2, and 5.4 cents on items 3 and 4.

The Post Office Dept. also received the following bids on an unspecified quantity of scouring powder: Murro Chemical Co., Burnsville, N. C., 3.18 cents; Federal Chemical Co., Chicago, 3.4 cents; Valley Prods. Co., Memphis, Tenn., 3.636 cents; and General Soap Co., Chicago, 3.74 cents.

Dishwashing Comp. Bids

Among the bids received on an unspecified quantity of dishwashing compound in a recent opening for miscellaneous supplies by the Federal Bureau of Supply, Washington, D. C., were those of: the Scientific Supply Co., Denver, Colo., 9 cents, formula-tion sodium tripolyphosphate, 40 per

cent; sodium metasilicate, 40 per cent; and soda ash, 58-20 per cent; and Economics Lab., St. Paul, Minn., 9.8 cents, formula RW-67 6.45 ounces per 10 gallons of 20 gr. hardness and 3.8 ounces per 10 gallons of 10 gr. hardness.

Armed Serv. Soft Soap Bids

Bids on an unspecified quantity of soft soap were received in a recent opening for miscellaneous supplies by the Armed Services Medical Procurement Agency, Brooklyn, from: R. M. Hollingshead Corp., Camden, N. J. \$2.51; Harley Soap Co., Philadelphia, Pa. \$2.67 for Atlanta; and Retort Pharmaceutical Co., New York, \$2.98 for Atlanta.

Soap, Scouring Powder Bids

The following bids were received on 40,000 pounds of scouring powder in a recent opening for miscellaneous supplies by the Post Office Dept., Washington, D. C.: Murro Chemical Co., Burnsville, N. C., 3.65 cents; Pal Products Mfg. Corp., Brooklyn, N. Y., 3.9 cents and Chemical Mfg. & Distributing Co., Easton, Pa., 3.92 cents.

Among the bids received on 40,000 pounds of soap powder, were those of Spazier Soap & Chemical Co., Santa Monica, Calif., with 3.25 cents; Colgate-Palmolive-Peet Co., Jersey City, N. J., 3.257 cents, and Chemical Mfg. & Distributing Co., Easton, Pa., 3.49 cents.

F.B.S. Soap Bids

Bids on an unspecified quantity of soap were received in a recent opening for miscellaneous supplies by the Federal Bureau of Supply, Washington, D. C. from: Colgate-Palmolive-Peet Co., Jersey City, 9.226 cents; Swift & Co., Chicago, 15 cents and Iowa Co., Burlington, Iowa, 15.5 cents.

P. O. Toilet Soap Bids

In a recent opening for miscellaneous supplies by the Post Office

Dept., Washington, D. C. for an unspecified quantity of toilet soap, the low bid was submitted by Stahl Soap Corp., Brooklyn, N. Y. with bids of 8.97 cents on item 1 and 9.72 cents on item 2. Procter & Gamble Co., Ivorydale, O., placed bids of 10.08 cents on item 1 and 10.61 cents on item 2.

Pin to P & G Dallas Man

Anthony W. Higgins, an engineer in the Dallas, Tex., factory of Procter & Gamble Co., Cincinnati, was recently awarded a diamond service pin on completion of 25 years employment with the company.

Victor Names Herring

The appointment of Chester R. Herring as manager of the Kansas City sales office of Victor Chemical Works, Chicago, was announced recently by O. H. Rashke, vice-president. He succeeds Harris McGavock, who has been manager of the office since 1921, and who continues as a consultant.

DCAT Meets Sept. 21-23

The 60th annual meeting of the Drug, Chemical and Allied Trades Section of the New York Board of Trades will be held Thursday through Saturday, Sept. 21-23, at Shawnee Inn, Shawnee-on-Delaware, Pa. The following are serving as committee chairman, according to Harold C. Green of L. Sonneborn Sons, Inc., New York, DCAT chairmen.

Banquet committee—C. P. Walker (Citro Chemical Co.); business program committee—Fred G. Singer (E. I. du Pont de Nemours & Co., Inc.); evening entertainment committee—C. A. Hanford (Pharmaco, Inc.); greetings committee—Robert B. Magnus (Magnus, Mabee & Reynard, Inc.).

Golf committee—William W. Huisking (Chas. L. Huisking & Co., Inc.); women's golf committee—Mrs. F. Dean Hildebrandt; women's card party—Murray Breese (Murray Breese Associates); memorials committee—William S. Auchincloss (Oil, Paint & Drug Reporter).

Misc. sports activities—J. G. Flanagan (S. B. Penick & Co.); vice chairman—J. David Hayden (R. P. Scherer Corp.); publicity committee—Ira P. MacNair (MacNair-Dorland Co.); reception committee—Lloyd I. Volckening (Ivers-Lee Co.); registration committee—C. M. Macauley (Prophy-lac-tic Brush Co.); transportation committee—William H. Sheffield, Jr. (Innis, Speiden & Co.).

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*"Just see how it provides machines
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of all kind of soaps."*

THE NEW HOUCHIN LINE INCLUDES:

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Detergent-Sanitizer Performance

THE quaternary ammonium compounds have been applied as sanitizers in dairies and restaurants with good results. They have been found compatible with alkaline and non-ionic detergents yielding compounds with an improved sterilizing effect at high pH's. These combination products have been considered as detergent-sanitizers.

Investigations have indicated that the washing performance of alkaline detergents is improved by the addition of surface active agents, although these in themselves may have little or no detergent value. However, it is also true that some alkaline detergent-surface active agent mixtures may have physical and chemical characteristics typical of good detergents and still show poor washing performance. A study of the performance of some detergent-sanitizer products in combination with surface active agents is considered in the following discussion.

Washing performance tests on a series of representative detergent-sanitizers, cationics, non-ionics, and anionics were made with Cincinnati tap water, using the detergent in concentrations recommended by the manufacturer or, in the absence of such, by .3 per cent solutions of the detergents.

Only two of the nine detergent-sanitizers tested showed a positive soil removal, with a maximum of three per cent. None of the cationics and non-ionics removed any soil, and some showed a soil build-up. Of the 13 anionics tested 10 showed a positive soil removal, and six of these removed between 78 and 92 per cent of the soil.

Alkaline detergents have been improved by the addition of surface active agents, although these themselves may have no detergent value.

The detergents used in the detergent-sanitizer combinations included both anionics and non-ionics.

In a second group of tests, the washing performance of .3 per cent solutions of five alkaline detergents was determined, comparing the effect of adding 100 p.p.m. of different types of surface active agents. The surface active agents added were an anionic, non-ionic and cationic, none of which had any detergent properties to speak of when used by itself. The alkaline detergents tested were: trisodium phosphate, sodium hexametaphosphate, sodium tetrapyrophosphate, sodium metasilicate, and sodium carbonate.

The addition of the anionic agent to both trisodium phosphate and sodium hexametaphosphate improved the washing performance of the detergent. Addition of the non-ionic agent to all five detergents improved washing performance in all five cases, even though washing performance of the non-ionic alone indicated a soil build-up. The addition of a cationic agent reduced greatly the washing performance of all five detergents. The quaternaries tested included: alkyl dimethyl benzyl ammonium chloride, para tertiary octyl phenoxyethoxy dimethyl benzyl ammonium chloride, alkyl aryl pyridinium chloride, diisobutyl cresoxy ethoxy ethyl dimethyl benzyl ammonium chloride and cetyl

dimethyl ethyl ammonium bromide.

A further study of the reduced washing performance of detergents on the progressive addition of quaternaries was made. Additions of 0, 10, 50, 100, and 200 p.p.m. of quaternary indicated that the drop in washing efficiency is rapid until 50 p.p.m. of the quaternary have been added, following which the washing performance is affected proportionately less with subsequent additions. The tests indicated also that as little as 10 p.p.m. of quaternary reduced detergency considerably. Sodium hexametaphosphate was found to be least affected by the cationics, and found also to be incompatible with the quaternary.

In a series of tests on the washing performance of: two alkaline detergents, on anionic, non-ionic and mixtures of the above, as affected by adding 50 p.p.m. of quaternary, the results varied. It was interesting to note that in two cases, the presence of an anionic agent neutralized the reducing effect of the quaternary.

On the basis of the studies made, the following conclusions were drawn:

(1) Washing performance of a mixture of detergent compound and surface active agent cannot be predicted on the basis of the performance of either compound alone.

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(2) The washing performance of alkaline detergents may be improved by the addition of small amounts of non-ionic or anionic surface active agents, although these may show little or no washing performance when used alone.

(3) Of eleven quaternaries tested all except one showed no soil removal from glass when used alone in the performance test. One quaternary showed 86 per cent soil removal in the performance test.

(4) The addition of quaternaries to alkaline detergents and alkaline detergent-non-ionic mixtures reduced the washing performance considerably, even with additions as low as 10 p.p.m.

(5) The washing performance of the detergent-quaternary mixtures was decreased more rapidly as the proportion of quaternary was increased.

Abstract of a paper by Francis I. Norris, and C. C. Ruchbott, Federal Security Agency, U. S. Public Health Service, Cincinnati, presented at the Detroit meeting of the American Chemical Society, April 17, 1950.

Fatty Acid Separation

Mixtures of stearic, palmitic and oleic acid may be separated by pouring the mixture into a 90 per cent aqueous solution of methyl alcohol until the concentration of fatty acid stock in the solvent is 30 per cent by weight, then cooling the mixture to precipitate the solids. The chilling may be conducted in three successive steps, i.e., 82° F., 60° F. and 10° F., recovering the oleic acid, stearic acid and palmitic respectively. Brit. Pat. 032,583 through *Chem. Abstracts*.

Surface Coatings Remover

A film forming substance, such as cellulose nitrate, acetate, propionate, butyrate, acetopropionate, or acetobutyrate, plus cellulose esters and a wetting agent are included in a formula for removing paint, varnish and adhesive. The usual solvents, paraffin wax, and benzene are included also. The benzene may be replaced with carbon tetrachloride and $C_2H_2Cl_2$ in which case, the surface active agent is not used. U. S. Pat. 2,495,729.

Titanium in Soap

The opacity of toilet soaps may be improved by the inclusion of titanium dioxide, added to the chips together with the perfume and color before milling. Zinc oxide has been used for this purpose, but is not satisfactory from the standpoint of cost and efficiency. For ordinary white or colored soaps, about 2.5 ounces of titanium per hundred pounds of soap is ample. For very white, or pastel shades of color, up to five ounces may be used. Although titanium is more effective than zinc oxide in masking a slight discoloration of the soap base, it should be remembered that it is not an antioxidant, and is not intended to prevent subsequent discoloration. *Soap Perf. & Cosmetics* 23, No. 6, 589-590 (1950).

Soap, Shampoo Perfumes

The following is a guide on the proportional quantities of the ethyl esters and acetates used in compounding soap and shampoo perfumes: isobutyl acetate: small amounts, .2 to .5 per cent, to give fruity effects to jasmine and rose liquid soap and shampoo perfumes; p-cresyl acetate: used best for soaps, about .4 to .7 per cent; sec-phenylglycol acetate: odor is somewhat prominent, use is limited to gardenia, jasmine and hyacinth soap perfumes; iso-bornyl acetate: use about five per cent as a background for medicated soap compounds, and in shampoos; isopulegyl acetate: used to best advantage at about seven per cent in lavender, rose and rose-geranium compounds for bath soaps; deca-hydro b-naphthol acetate: particularly useful in household soaps, non-poisonous disinfectants and insecticide solvents, menthyl acetate: useful in dry shampoos. *Soap Perf. & Cosmetics* 23, No. 5, 500-504 (1950).

Fatty Acid Synthesis

Paraffinic residues, boiling between 320° and 450° with chain lengths of 20 to 30 carbons, and suitable for producing synthetic fatty acids, are obtained by the Fischer-Tropsch process. The reaction, which is exothermic, takes about 15 to 30 hours in aluminum or special steel towers. The product is washed with 30

per cent sodium carbonate, and 45 per cent sodium hydroxide at 95°. Non-saponifiables are separated, and the soap is heated to 320°-350° to remove water and paraffins, which are recycled along with the previously recovered nonsaponifiables. The soap is dissolved and converted to fatty acid and sodium sulfate with 75 per cent sulfuric acid. *Z. Ver. deut. Ing.* 91, 463-7 (1949), through *Chem. Abstracts*.

Fat Pretreatments

Oils and molten fats used in fat splitting are pre-treated with dilute sulfuric acid to remove impurities. The acid is removed by washing with warm water, and the pre-cleaned oil introduced into the autoclave, for hydrolysis to fatty acids and glycerine water. *Indian Soap Journal* 15, No. 9, 206-208 (1950).

Dry Type Shampoo

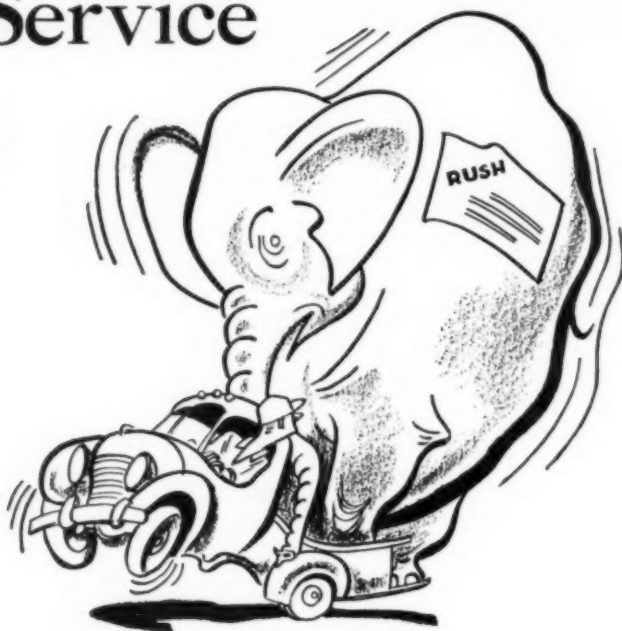
A formula for the production of a "dry" type shampoo includes the following proportions, in per cent by weight: liquid sulfated fatty alcohol 5, tetrasodium pyrophosphate, 1; borax, 1; glycerin, 5; benzyl alcohol, 10; terpineol, 2; industrial methylated spirit, 2; and water to make 100. The proportion of detergent, alkalis, and solvents may be varied and equivalent materials substituted. *Soap Perf. & Cosmetics* 23 No. 5, 516 (1950).

Soaps as Emulsifiers

Water-soluble alkali metal and ammonia soaps have been used for many years to prepare highly useful, stable oil-in-water emulsions. The alkylolamine and aminohydroxy soaps have proved especially effective in such cosmetic emulsions; however, these organic bases are too weak to yield emulsions by the direct saponification of an oil, fat, or wax, and the soap must be prepared by reaction with a free fatty acid.

Among the anionic emulsifiers, soaps as a group are not suitable in other than alkaline emulsions, and are quite readily affected, even by relatively low concentrations of electrolytes. *Soap Perf. & Cosmetics* 23, No. 6, 600-604 (1950).

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RENEX provides the compounder with a versatile tool. This powerful, low-cost, non-ionic detergent has outstanding "specialty" properties that make it ideal for use in compounding with other ingredients.

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Low foaming. Effective over a wide temperature range. Compatible with soaps and anionic and cationic materials. Excellent emulsifying action. Superior soil suspending properties. Free rinsing. Superior detergency in any kind of water. Non-irritating to the skin.

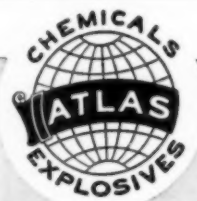
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Soap Discoloration

Problems that may arise from the incorrect choice of wrappers for soap, include discoloration of the soap, discoloration of the wrapper and fading of inks used for printing the wrapper. The possibility of chemical reaction at points of contact, variations due to the presence of moisture or atmospheric oxidation, should be taken into consideration. Of the various tests for soap wrappers, Sheely's "soap contact test," seems to be the most reliable. It consists of sandwiching the wrapper between two freshly cut surfaces of the soap under a pressure of two pounds per square inch for 16 hours at room temperature, followed by the examination of the soap and wrapper for color transference, discoloration, fading and bleeding. *Soap Perf. & Cosmetics* 23, No. 5, 483-484 (1950).

Surfactants in Sewage

Primary sedimentation, production of methane, sludge digestion, bacterial activity and primary sedimentation were not affected by the presence of synthetic detergents in the concentrations encountered in normal sewage treatment. The anionic, "Teepol," and non-ionic, "Lissapol N," were among the detergents tested. *Surveyor* 109, 39-40 (1950).

New Detergency Test

A new, more realistic cotton detergency test has been developed for the evaluation of detergents. The test involves a standard soil, compounded to represent ordinary street soil, and applied to cotton test swatches by rubbing the dry soil into the cloth. Washing is performed in a miniature oscillating type of washer designed to imitate action of the household type of washer. H. L. Sanders and J. M. Lambert, *J. Am. Oil Chem.* 27, No. 5 153-159 (1950).

Polishing Paper

Small quantities of three surface active agents: "Span," "Tween," and G-2150, plus a melamine HCHO or urea HCHO resin, with a mineral oil and flexible agent are used to impregnate a size-free and filler-free pulp

paper. The product is useful in dusting and polishing furniture. U. S. Pat. 2,495,066.

Neutral Detergent

A neutral detergent, nontoxic and nonirritant to the skin, is prepared by emulsifying an active detergent, derived from petroleum, such as a neutralized cyclic sulfonate, together with two waxy products; one a polymer of ethylene oxide like "Scurol," soluble in water, and the other insoluble in water, such as paraffin. Typical proportions are 25 per cent by weight of the petroleum derivatives, 55 per cent of the water soluble waxy product, and 20 per cent of the insoluble product. Ital. Pat. 439,173 (1948) through *Chem. Abstracts*.

New GE Turbidimeter

General Electric Co., Schenectady, N. Y., announced recently the development of a new "recording turbidimeter." The instrument measures and records the quantity of particles suspended in fluids flowing through it. The turbidimeter provides a means for checking and controlling water treatment and waste disposal processes and other operations where turbidity is an important consideration. The instrument is automatic and makes continuous records. It can alert operators immediately if turbidity exceeds predetermined limits, and is capable of determining the end point of processes in which salts are precipitated out of solution and of monitoring chemical wastes to see if they should be treated.

New Hercules Defoamer

A new defoamer in the form of two and one-half pound bricks has been introduced commercially recently by Hercules Powder Co., Wilmington, Del. Called "Defoamer 4", the new product is packaged in an individual carton and makes about 40 gallons of final dispersion at 0.75 per cent solids.

The bricks can be stored indefinitely in a cool place without losing their effectiveness. Twenty bricks are packaged and shipped in a corrugated container requiring little storage space.

Fatty Acid Preparation

Pilot plant operations for reproducing specific fatty acid compositions involved distillation to remove lower fatty acid constituents from coconut oil methyl esters, and fractional crystallization from methyl alcohol to yield the methyl esters of tallow and of peanut oil. The fractions were blended, leaving a portion amounting to 20 per cent of the total, which could be used in other soap formulas, and in some other industries. The intermediate preparation of alcohol esters in soap making permits reproduction and maintenance of a desired fatty acid composition. *Acta Polytech., Chem. Met. Ser.*, No. 11, 61 pp (1949) through *Chem. Abstracts*.

Resin Coated Pipes

Iron pipes are made stable to the corrosive action of acids, bases, soap, and solvents to 90° by coating the inside with a polyvinyl resin, such as Vinidur. The resin is dried, heated by induction currents, and pressure is applied to force the resin lining on to the inner surface. Joints are made with vinyl resin packing. *Chem. Weekblad.* 43, 780-1 (1947) through *Chem. Abstracts*.

Detergent Patent Report

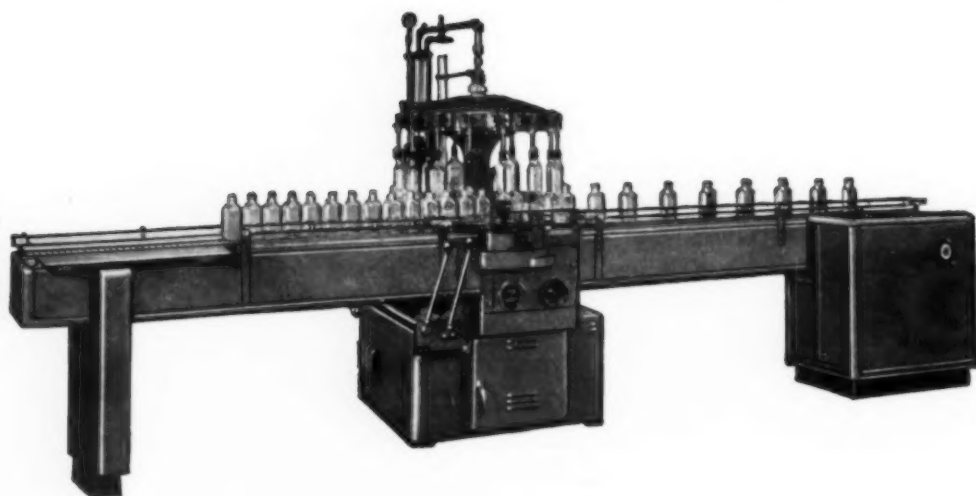
A report covering over 200 expired patents on detergents was announced recently by Patent Publications, Washington, D. C. Covered are patents in the public domain on toilet soaps, household and heavy duty cleaners, metal cleaners, paint, varnish and finish removers, textile detergents and cleaners and miscellaneous cleaners. The booklet contains a subject index. Price of the report is \$2.00.

Issues Sanitization Booklet

"Good Sanitation is Good Business" is the title of a new 12-page booklet issued by the James Laboratories, Chicago. The booklet describes the activities of an inspection-laboratory service designed for the specific requirements of plants engaged in food processing, manufacturing and warehousing.

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Filler **precisely** fills all liquids—whether light, heavy,
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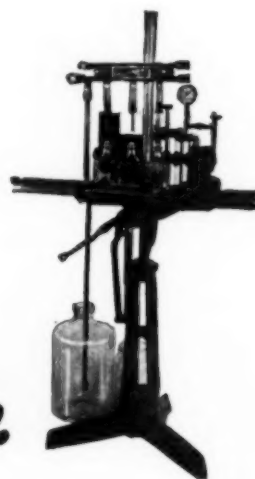
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semi-automatic, hand-
fed equipment to clean,
fill, close, convey jars,
bottles, tins, collapsible
tubes.

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KIEFER CINATI JUNIOR Vacuum Filling Machine

If your production is 25 to 50 gross a day
and you want the job done efficiently with
small investment, here is just the purchase.



The Karl Kiefer Machine Co.

CINCINNATI, U. S. A.

NEW YORK — BOSTON — CHICAGO — BALTIMORE — SAN FRANCISCO — SEATTLE — SAVANNAH — LOS ANGELES — LONDON, ENGLAND

By E. G. THOMSEN, Ph.D.

THE best method of reading trade and technical journals is a problem which at some time or other presents itself to plant and laboratory men. So much is published in such periodicals that it is impossible to read anything but a portion of the articles, even in our own fields of endeavor. The writer recently sat in on a discussion of this subject with workers in different scientific fields, and production men. The viewpoints advanced were very helpful, although it was evident that the majority at the conference, like most of us, do not read constructively. Our methods of reading leave much to be desired. Some comments as to how others carry out their reading may be useful.

A number of methods pursued in digesting scientific and trade news were described. Reading habits varied with different individuals. As the meeting was called to seek improvement in gaining knowledge through reading, each person was requested to discuss his reading routine. It was interesting to learn that the majority had no system of reading whatsoever. Those who did read in an orderly manner had helpful suggestions to offer.

The method followed most generally is a haphazard one. As the various publications reached the desks of their readers, they were glanced over casually and put aside for closer study in the future. Several men admitted they devoted more time and a more consistent method of reading to daily newspapers than to scientific journals even though the latter are of more importance to their career and livelihood.

Some stated that they opened the periodical first to the index, checked the subjects of interest and read the full articles at some future, convenient time. Closely allied to this is the method of paging through the magazine and reading either the sum-

mary of the editor at the head of the article or the author's summary at the conclusion of it. It was quite generally agreed that these abstracts were most



DR. THOMSEN

helpful in deciding whether or not to read carefully the entire article

One or two of those present reported that they pore over certain periodicals carefully, reading them methodically. Such articles as applied to their particular science or work are read word for word in the order that they appear in the publications.

One man stated he keeps a subject file index, noting the highlights of interest to him and keeping the file available to be read when a particular problem arises. Others stated they did not have the time to read all papers of importance so they waited until abstracts of the articles appeared in another publication. If the abstracter divulges anything of particular interest, the original article is read carefully.

The reading of advertising pages was mentioned at the conference. It was the consensus that these pages are given more careful attention than text pages. The group felt that in the advertising pages they find the information regarding new developments in their fields presented con-

cisely, especially in trade journals. They also are able to obtain through these advertisements helpful technical bulletins and information which might be considered commercialized propaganda if included in the text pages, but which are of vital importance to the work of most of the men. The majority stated they look over the advertising before reading the text matter, just as one looks over the comics or sport pages in a daily newspaper before reading the news.

Another point of interest that arose concerned the most advantageous time to read. Some stated they have no time to read during the daytime, as they were too busy or might be accused of wasting time. Therefore, they do most of their reading after hours. At that time, it was admitted, they are mind weary and the articles do not register vividly. Besides there is considerable distraction by recreation pursuits, children, visitors and social engagements. Those who follow an orderly procedure in reading, in the majority of the cases, put aside a specified time to read during the daytime. Half an hour to an hour devoted to reading in the morning is the most fruitful, it was indicated by the conference. The mind is more receptive during this period and the concentration necessary to get the most out of a scientific article is possible.

The question of which journals to read was also discussed. It was generally agreed that the publications issued by the various scientific societies are indispensable. Some criticism was leveled at the fact that the advertising in these periodicals was deficient and the articles sometimes were too technical. Several present at the conference stated they gained more constructive information from the technical articles in the independently published scientific and trade journals. The men holding these views were more industrially minded but, nevertheless, they were in the majority. Publications which sought to write up scientific facts in popular style were considered to be inaccurate, and at times more harmful than beneficial because the subject matter is often written by a

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Cowles DRYMET, anhydrous sodium metasilicate, is the most highly concentrated form of sodium metasilicate available. It is more economical to use, on the basis of both Na_2O (alkalinity) and SiO_2 (silicate) than any other type of hydrated or anhydrous detergent silicate, either compounded or by itself. DRYMET contains no water of crystallization.

DRYSEQ*

THE ALL-PURPOSE DETERGENT SILICATE

Cowles DRYSEQ, anhydrous sodium sesquisilicate, is a medium pH alkaline cleaner which will do fast, dependable work at a low cost to the user. It is a white, free-flowing powder, quickly and completely soluble in hot or cold water—containing 56.75% Na_2O —making it an economical base material for compounding.

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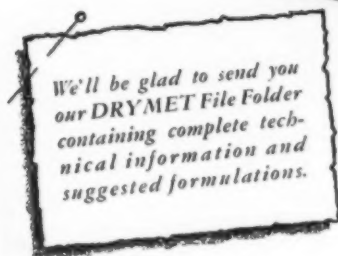
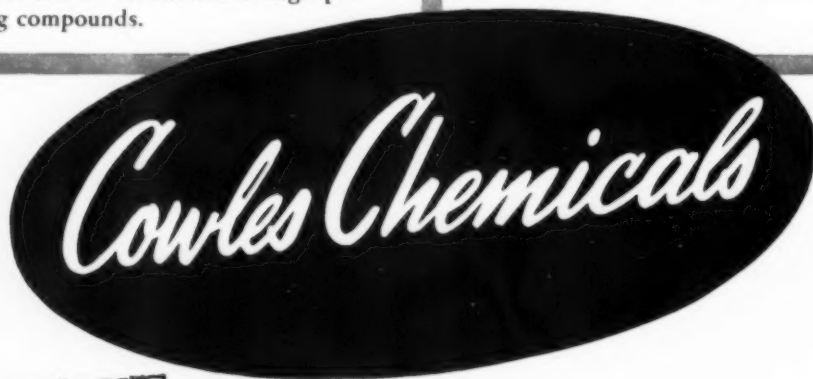
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Cowles DRYORTH, anhydrous sodium orthosilicate, is a powerful, speedy, heavy-duty cleaner with valuable penetrating and wetting-out properties, reinforced dirt-removing power and unusual emulsifying action. It is an anhydrous, free-flowing powdered silicate containing not less than 60% Na_2O , which may also be used as an economical constituent of high pH cleaning compounds.

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Cowles CRYSTAMET is a pure, perfectly white, free-flowing granular pentahydrate sodium metasilicate with the normal 42% water of crystallization. Suggested for compounding when it is desirable to lower the concentration of a finished product. Readily soluble—chemically stable—easy to handle. Can be used on medium pH jobs.



We'll be glad to send you our DRYMET File Folder containing complete technical information and suggested formulations.

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reporter rather than by an author with a scientific training background.

All of us came out of this meeting with a better understanding of how to conduct our reading. While older men may be set in their reading habits, younger men who still have to develop a routine might study their reading methods and devise their own systems. Gaining up-to-date information on scientific and trade matters is one of the most important duties of plant and laboratory men. The selection of the right periodicals and books to read to advance one's professional knowledge is a matter that does not have sufficient attention. Discussions of the sort described above go a long way toward placing the subject in its true perspective. More organizations would profit through putting greater emphasis upon proper reading procedures.

Improved Dust Control

W. W. SLY MANUFACTURING CO., Cleveland, is offering "Dynaclone," a new cloth screen dust filter. A number of advantages are claimed for these filters. Mechanical shaking, uniform suction at the dust source, longer life, less maintenance and automatic cleanliness with no additional power or equipment are possible through their use. Complete information is available upon request.

Rust Paint

"RUSTREM," a paint that is said to stop rust on such iron surfaces as stacks, fences, flashings and outdoor machinery, exposed to the elements, is now available from Speco, Inc., Cleveland. It can be painted over rust without priming, scraping or brushing, thereby affording economy in labor.

Glassware Detergents

WYANDOTTE CHEMICALS CORP., Wyandotte, Mich., recently announced "Dural H" and "Dural M" detergents for cleaning laboratory glassware more efficiently and with a minimum of etching. The former is for hand washing, the latter for machine dish washing. Both penetrate rapidly, reduce weight loss and

protect both glassware and hands, according to the maker.

Water Hardness Kit

BERSWORTH CHEMICAL CO., Framingham, Mass., suppliers of "Versenes," have introduced recently a "Versenate" water test kit for determining total water hardness in less than two minutes. The accuracy is within one grain of hardness per gallon. It is a colormetric test that is easily read by anyone, without the use of laboratory apparatus. This "Versenate" method is priced at \$3.00 for the complete kit, postpaid.

New Paste Container

A NOVEL method of dispensing creamy or pasty materials is offered by General Cap & Container Corp., New York. It consists of a polyethylene, plastic sack fastened to the bottom of a revolving base of a rigid cylinder closed by a screw cap. As this base is twisted slightly, the paste is exuded from the sack. Alkaline and acid materials are not acted upon by the sack.

Tape for Cold Water Pipes

A METHOD to prevent the unsightly, troublesome annoyance of sweating cold water lines is offered by Associated Specialties Co., Detroit. It consists of a 3-inch wide strip of "Fiberglass" that wraps diagonally around the dripping pipes. This is then

covered with semi-elastic seal tape known as "No-Sweat." This effective insulation prevents condensation, hence dripping.

Agitator for Heavy Liquids

A NEW Lightnin turbine type, heavy duty agitator for liquids has been developed by Mixing Equipment Co., Rochester, N. Y. Since it is mounted on casters it may be quickly transported from tank to tank. As many as 40 tanks have been served by a single unit, the company reports. The mixer may be quickly adjusted to speeds required for individual batches with a simple variable speed control.

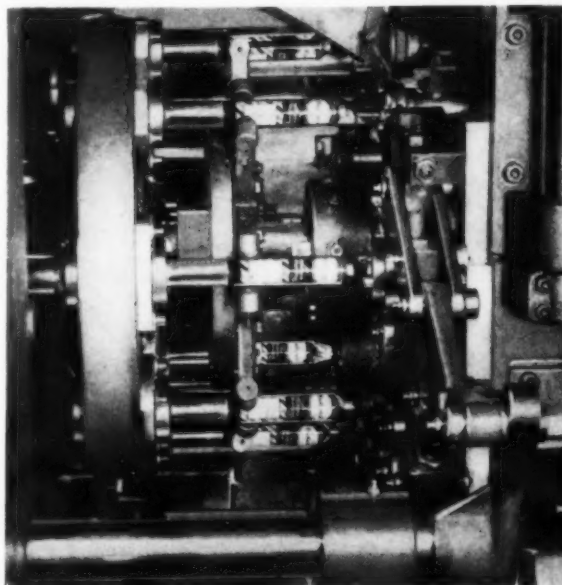
Decolorizing Resin

A DECOLORIZING resin known as "Permutit DR" is being featured by Permutit Co., New York. Claimed to be as efficient as carbon black, the product carries out all decolorization in the liquid phase. Regeneration of the absorbent is accomplished by alkali and its rinse is automatic. No heat is necessary. This low cost decolorizer imparts no taste or odor to solutions and may be used for removing color of many items.

New ATF Tube Machine

ATF, Inc., Elizabeth, N. J., recently announced it had entered the packaging field with the introduction of a machine for manufacturing col-

Collapsible tubes produced by new process announced recently by A.T.F., Inc., Elizabeth, N. J.



WE RECOMMEND THE USE OF

SYNTHETIC PATCHOULI 1474
&
ARTIFICIAL GERANIUM 5-T-2

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lapsible tubes by a new process. The machine produces tubes from foil, laminated or coated on both sides with plastic, a feature that is said to increase the number of substances that can be packaged in tubes of the type presently used for toothpaste and shaving creams.

Advantages claimed for the new process include these: 1.) the layer of plastic serving as the liner for the finished tube can be varied to meet the exact requirements of the substance or material to be packaged. Packaging corrosive substances, for instance, needs a liner with properties different from those required to hold a bland material. 2.) The plastic layer serving as the exterior of the tube can be printed on the underside prior to lamination, with an advertising message or identification that is permanently protected against chipping, peeling or flaking. 3.) The layers of laminated foil can be double or triple wound in the course of tube manufacture to provide any reasonable required strength. 4.) Tubes can be made in almost any diameter or length desired. 5.) Tubes can be manufactured on a single machine, occupying less floor space than required by previous methods.

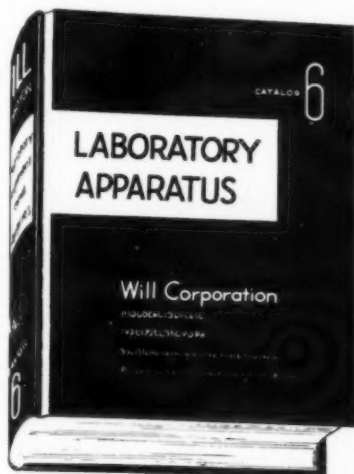
New MRM Liquid Filler

A new series of gravity liquid fillers equipped with 10 foot conveyors was introduced recently by MRM Co., Brooklyn. Four models, ranging from six to 12 spouts, fill containers from fractional ounces to two gallons. Recommended for filling foaming materials such as shampoo and similar viscous liquids, the new line features a new spout design that does not have any packing. This is said to eliminate the possibility of contamination. All parts, including the distributor head, are accessible for thorough cleaning. Metallic parts in contact with the filling substance are made of stainless steel or other metals if requested.

Conveyors are equipped with heavy duty, $\frac{1}{4}$ h.p. motors and adjustable guide rails that are quickly set to accommodate different size containers. Occupies a floor area of 13 feet x six feet one x two feet 10.

New Will Equip. Catalog

Publication of a new 902-page catalog listing more than 12,000 items and sizes of laboratory equipment and



supplies, illustrated with 3500 wood engravings has just been announced by Will Corporation, Rochester, N. Y. More than 2500 new items have been added to the new catalog and obsolete equipment eliminated. Arrangement is alphabetical with running headline on every page. Readability and ease in locating items have been stressed in the latest catalog. Those interested in securing copies are invited to write on business letterhead to Will Corp., Dept. SS, Rochester 3, N. Y.

Two New Detrex Folders

Folders on two of its new cleaning compounds were issued recently by Detrex Corp., Detroit. One deals with a heavy duty cleaning compound that has been developed for the cleaning of steel prior to vitreous enameling. The other covers a plater's electrolytic cleaner, compounded especially for use on steel, brass, nickel and die castings.

Ritchie Packaging Booklet

A new booklet, "101 Ways to Get Better Packaging" was published recently by W. C. Ritchie and Co., Chicago. The booklet, which is illustrated with pictures of various types of packaging and an actual plant scene, features a chart listing all essential factors to be considered in the choice of a new package. Under head-

ings: "What, who, where, when, why and how," information listed includes: nature of product, shape, material, consistency, etc.; method of filling into package; protection needed by product in packaging; trademark design now used; cost factors, selling price of product, etc.

Methyl Ethyl Ketone Book

A 130-page book entitled "Methyl Ethyl Ketone" was published recently and is now available on letterhead request from Shell Chemical Corp., 500 Fifth Avenue, New York 18, or 100 Bush Street, San Francisco. The commercial applications of this petroleum-derived chemical are covered in the book. Although the use of the material in surface coatings is emphasized, non-surface coating applications such as cleaning compounds, insecticides, etc., are described. The function of methyl ethyl ketone in solvent extraction is also covered. A review of chemical reactions and physical properties is presented. The volume includes detailed analytical procedures and a bibliography of more than 500 references.

Wyandotte Names Lilly

The appointment of Merton B. Lilly, previously associated with the patent law firm of Owen and Owen, Toledo, as head of the patent department of Wyandotte Chemicals Corp., Wyandotte, Mich., was announced recently by Dr. Thomas H. Vaughn, vice-president in charge of research and development. He succeeds William R. Day, who was recently named as assistant to the president of the firm.

S.C.I. Medal to Rand

William M. Rand, president of Monsanto Chemical Co., St. Louis, has been chosen to receive the Chemical Industry Medal for 1950, according to a recent announcement of the American Section of the Society of Chemical Industry, donor of the medal. The formal presentation will be made at a meeting of the American Section following a dinner in Mr. Rand's honor at the Waldorf-Astoria, New York, Nov. 3.

Soap or Synthetic Batch or Continuous

YOU NEED A GOOD CAUSTIC

You can make a better soap or synthetic detergent with Wyandotte Caustic Soda. And that's just as true of the new continuous saponification methods as it is of full-boiling.

In fact, many of these new methods require a high-quality caustic or the catalyst will be contaminated.

Wyandotte makes caustic soda in sufficient grades to meet most specifications. Our "C" grade is exceptionally pure. It is produced by the mercury cell process and needs no further purification to meet even the highest specifications. This *natural* purity means

that you need not depend upon the efficiency of a purification system for purity and uniformity.

Take advantage, too, of the economies in transportation, storage and handling costs that come when you select the *form* of Wyandotte Caustic Soda that is right for you. We make Wyandotte Caustic Soda in 7 forms: 50% liquid; 74% liquid; solid; standard flake; 1/4" flake; crystal; powdered. Shipment can be made by truck, box-car, tank car or water carrier. Write for detailed information on Wyandotte's grades and forms of caustic.

SODA ASH • CAUSTIC SODA
BICARBONATE OF SODA
CALCIUM CARBONATE • CALCIUM CHLORIDE
CHLORINE • HYDROGEN • DRY ICE
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CARBOSE (Sodium CMC) • ETHYLENE DICHLORIDE
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PRODUCTS AND PROCESSES

Bactericidal Surfactants

Studies of the bactericidal effect of surface active agents indicate that this action is physical and not chemical. There is a similarity between the physical structure of erythrocytes and certain types of bacteria, since bactericidal action and hemolysis behave similar ways. *Zentr. Bakt. Parasitenk., Abt. 1*, 153, 326-35 (1949). (through *Chem. Abst.*)

Lava Ash Scouring Powder

Scouring and cleaning compounds may be prepared from a fine lava ash, which has been passed through a flame of 800° to 1100°. This treatment of the ash reduces the density of the ash from .97 to .05, and lowers the intensity of the color because of the reduction of Fe_2O_3 to FeO . U. S. Pat. 2,496,203.

Cold Made Soap

Oils and fats selected for cold process soap making should be of the highest grade of purity. If the free fatty acid content is too high, the soap will have a bad odor; the alkali will react preferentially with the fatty acids forming a soap which remains as granules, spoiling the uniformity of the product.

The caustic soda used should be five to six per cent below that required theoretically, to assure complete saponification. It is practically impossible to make a neutral soap by the cold soap making process, and, therefore, it is better to have some unchanged fat than some free caustic. The fat and rosin mixture should be cooled to room temperature before adding the cold lye, otherwise good mixing is impossible, and a layer of oil may separate on the top yielding a poor soap. *Indian Soap Journal* 15, No. 8, 188-191 (1950).

Shampoo Cream Stabilizer

Polygalactose xylose, i.e. *Promulsin*, in concentrations of three to four per cent, has been suggested for use as

an emulsion stabilizer in cream type shampoos. A small amount of mineral oil or petroleum jelly is recommended as the oil ingredient for most preparations. *Manuf. Chemist* 21, No. 6, 238 (1950).

Saponin Detergent Base

Although the saponins have the property of foaming in aqueous solutions, they do not have the powers of detergency, indicating that there is no direct relationship between foaming and detergency. The tests conducted compared the results of washing, using a saponin detergent and mersolate detergent. Saponin samples showed poorer detergency and surface activity. *Chem. Zentr.* 1947, II, 469. (through *Chem. Abst.*)

Organic Fungicide

An effective fungicide active against a number of plant diseases contains *n*-trichloromethylthiotetrahydrophthalimide as the active ingredient. It is designated as SR-406. *Chemical Engineering* 57, No. 5, 192 (1950).

Cold Saponification

The addition of ten per cent 1-hexadecanol and one per cent zinc oxide to a fat or oil to be saponified, will promote an oil in water type emulsion, and cold saponification. Alkali is added with agitation. Japan 174,796 (through *Chem. Abst.*).

Antiseptic Soaps

(From Page 38)

presented in graphic form as a series of curves showing thereby the progress of the degerming effectiveness of "G-11" in soap.

Basic curves are presented representing respectively, the degerming results as obtained on the 1st, 5th, and 10th "use-days." A control curve is included, which shows the standard or goal aimed at, namely the reduction in skin flora count as produced by using

a standard hospital scrub-up procedure (employing 10 basins and using alcohol as a final dip). It will be noted from these curves that "G-11" produces the desired results of reducing the resident flora at the end of the 5th basin wash (or even the 3rd basin) to a level lower than that produced by the hospital scrub method. In fact, even at the start, as shown by the 1st basin data, this lower flora level is present and apparent.

To recapitulate, we see that at the start on the first day of use of the degerming soap the hand-washings show a removal in the vicinity of 4,000,000 for the 1st basin and 2,400,000 in the 5th basin. Then as the use of the antiseptic soap continues the degerming process likewise continues; and, as the curves show, the residual flora drops to around 1,000,000 for the 1st basin and to 500,000 for the 5th basin, showing how the degerming compound reduced the resident skin flora and maintained it at a comparatively low level. Calculations from these curves show that there is a reduction of about 90 per cent in count. Some individuals will show as much as 98 per cent or more. Any figure (calculated on the 5th basin data) above 85 per cent is considered as showing good degerming effects.

In conclusion we would state that our aim here has been to present a simplified method suitable for evaluating purposes. We hope that we have succeeded sufficiently in this regard so that others may find the method practical.

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7. For additional bibliographic references the reader is referred to Sindar Corporation's Bulletin 49-1, July 1949.

WATERLESS HAND CLEANER MANUFACTURERS:

Why cripple sales appeal with undesirable odors of ammonia and mineral terps? ODORMASQUE N gives your products a sales lift because it is pleasant smelling... completely neutralizes unpleasant odors.



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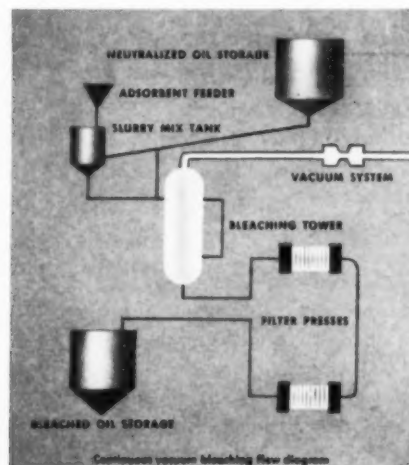
CONTINUOUS VACUUM BLEACHING Proves **FILTROL*** BETTER THAN EVER!



"Low pH earths (such as Filtrol) respond better than high pH earths (such as natural clays) to vacuum bleaching, especially with respect to improved color removal and oil stability."

This is a quotation from independent research reported in a leading chemical publication. It demonstrates the superiority of Filtrol in the continuous vacuum bleaching of vegetable oils.

J.A.O.C.S. May and August, 1949



The continuous vacuum bleaching process is proven to have the following advantages over atmospheric operated kettle bleaching:

1. Free fatty acid rise in bleaching is eliminated.
2. A more stable oil to oxidation and flavor reversion.
3. Lower bleached oil colors.
4. A greater reduction in soap content in oil.
5. Use of less adsorbent.
6. Less subsequent catalyst poisoning in hydrogenation.
7. Better flavor stability of subsequently hydrogenated and deodorized oils.

Filtrol gives refiners greater profits, because 50% less Filtrol adsorbent gives equal color reduction, therefore refiners save and sell up to 50% of the valuable oil lost in the press cake.

Fewer press runs—minimum press cloth burning—less disposal also contribute real savings that can be converted to profits.

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WORLD'S LARGEST MANUFACTURER OF ADSORBENTS,
CATALYSTS AND DESICCANTS

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By John W. McCutcheon

MANY inquiries have been made and numerous articles written regarding the prospects for a continued increase in synthetic detergent production. It would not be in keeping with the times nor fitting in view of the volume of synthetic detergent business if we did not devote about half of this column to its consideration.

The writer can recall very distinctly his reluctance a few years ago to consider annual synthetic detergent production of a billion pounds possible within reasonable sight. At their current rate of production the billion pound figure will be reached this year. Some have predicted a production figure as high as 1.2 billion pounds for 1951. These may be considered conservative estimates. Of course, the great bulk of this increase reflects expanded retail sales.

The greatest revolution in the soap industry since the kerosene lamp replaced the candle about a hundred years ago, or the introduction of hydrogenation putting soapers into the edible business forty years ago, is taking place today. That the soap industry itself considers synthetics as of major importance to their existence can be seen on every hand. New plants, patents protecting new processes of manufacture and the nature of the advertising substantiate this belief.

One leading soap company now advertises its product as, "Better than any soap." Shades of Procter and Gamble, the candlestick makers! For a while, soapers thought the great inroads would be mainly in the hard water areas of the Mid-West. This idea was bolstered by the data published in yearly newspaper surveys.

The *Philadelphia Inquirer* reporting on a comparatively soft water area (60-100 PPM) for years had no

need for a separate classification for synthetics. All this may be changed now, however, since the conservative



Fels & Co. has at last entered this field.

The question arises, naturally, how high will the production of synthetics finally go and how low soap production will fall. The possibility that soap production may in the future be confined to bar form toilet soap and similar products was listed by one writer in the June issue of this magazine. If such a change were to take place, it might be unfortunate for the producers of tallow, about two billion pounds of which are consumed annually in soap. On the other hand, there are certain factors which act as a brake against such a trend. A surplus of tallow would mean lower soap prices. It might also mean increased research on methods of better using tallow for synthetics. Cheaper soap would also increase the popularity of home water softeners which are now taking hold in the hard water areas. Increased research on ion exchange resins must also be considered. Rohm & Haas Co., Philadelphia, has recently brought out a new product for this purpose.

Of all the fatty oils used for

synthetics thus far, coconut oil exceeds all others. Demand for this oil no doubt has kept the price at such a high level. There is no reason to believe that tallow derived synthetics may not be blended in increasing amounts in retail products, particularly the heavy duty types. On the other hand, the recent preliminary Tariff Commission Report for 1949 on synthetics shows that 96 per cent of the increase over 1948 is in the category of petroleum derived products. The gain of approximately 40 million pounds raises the total to approximately 380 million pounds (soaps and sulfonated oils deducted), an increase of 18 per cent over 1948. This increase is about half as large as that of 1948 over 1947 but should not be taken as indicative of a leveling off.

The conclusions to be drawn from the above discussion are that synthetics are continuing to expand, that the factors involved are not yet clear cut and that a watchful attitude should be maintained.

* * *

THE use of Bis (3, 5, 6 trichloro-2-hydroxy phenyl) methane (G-11) as a disinfectant in soap has been well established. Its chief advantage lies in the effectiveness of its sodium salt in alkaline solutions. Heretofore products of this type have lost considerable potency when made alkaline. If such products were put in synthetics, however, it is possible that a wider range of disinfectants could be used. A product, which might have merit in this field is "Ottasept" [chloro-m-xylene (2-chloro-5-hydroxy-m-xylene)] made by Ottawa Chemical Co., Toledo. While it does lose some of its effectiveness in soap solutions, the loss may not be great enough to preclude its use in soap.

* * *

"The old order changeth, yielding place to new." This line from Tennyson's "Mort D'Arthur" was recalled recently when the writer viewed the new Canadian "Lux." It is now being sold as a spray dried product for the general family wash. Apparently Canadians are running out those delicate undies, etc., and this is the Lever

Ask yourself these questions

● What makes red oil red?

The answer is color bodies and other impurities which are not removed from the fatty acids by the usual processes such as distillation and filtration. These impurities not only make the Red Oil red, but they give it the strong odor usually associated with this product. In addition, these impurities make the Red Oil unstable in color when heated in processes such as esterification and saponification.

All grades of W. C. Hardesty Co., Inc., distilled Red Oil have these impurities removed in their *regular plant processing*. Our regular Red Oils are not red but amber in color with a very bland odor and maximum stability to withstand high temperatures without discoloration or oxidation. Our best salesman is a sample. Send for yours today, and compare the color with any other commercial Red Oil.

1005 Low Titre Redolene Distilled Oleic 3-5° C Titre
1010 Redolene Distilled Oleic 8-10° C Titre

For especially light colored products, we recommend the use of our White Oleic Acid, which is in a color class by itself.

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● Is distillation of stearic acid enough?

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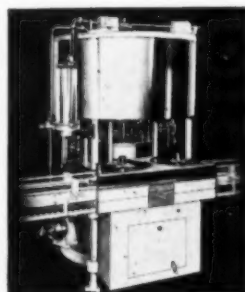
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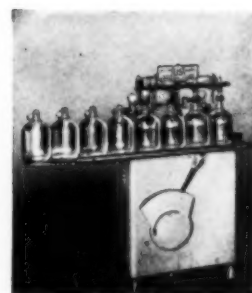


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of Canada answer to the problem. Hurrah for overalls and the sweat shirt!

* * *

IN conjunction with the above, it must be reported that Canada is on the move industrially; oil in Alberta and Saskatchewan, new Iron and titanium mines in Quebec, etc. Surfactant manufacturers in America are quick to take cognizance of this fact and are moving north. Atlas Powder Company has formed a new company with G. F. Sterne & Sons of Brantford, Ontario. E. F. Drew has a subsidiary at Ajax, Ontario. Antara Products Division of General Aniline has joined hands with the Standard Chemical Company, Ltd. of Leaside, Ontario to form Chemical Developments of Canada, Ltd. Atlantic Refining Co. has the Naugatuck Chemicals Division of Dominion Rubber Company, Ltd. Elmira, Ontario and Ultra Chemical Works, Inc. has a subsidiary Delta Chemical Works Corp. of Brantford, Ontario. All above within the last year. The last named company has also moved south, forming Icon S. A. Mexico, D. F.

Book on Toxicology

The Chemistry of Industrial Toxicology by Hervey B. Elkins. Published by John Wiley & Sons, Inc., New York. 406 pp., 5 1/2 x 8 1/2 inches, cloth binding, price \$5.50.

Industrial poisons are considered with respect to the industrial processes in which they occur, rather than discussing the symptomatology and pathology of their effects on human beings. After a general discussion of the poisons, and some of the tests for discovering them, the author presents a more complete analysis of about 200 poisons, their treatment, maximum allowable concentration, harmful effects, etc.

In a discussion of industrial operations and processes, the various atmospheric contaminants involved are listed, with the concentrations of use. Some 150 industrial operations are tabulated, including: fabric cleaning operations such as, wool fulling, spotting, dry cleaning, metal degreasing, fabric dyeing, leather tanning, etc. The

hazards associated with the use of some insecticides, such as the arsenicals and flourine compounds are discussed also.

The text includes a section on the various instruments used in air sampling, testing for the presence of toxic substances; as well as a section on the various analytical methods and procedures involved in this determination. A bibliography of 366 references completes the text.

— • —

Publishes Pet. Chem. Ind.

The British book "Petroleum Chemical Industries" by R. F. Goldstein, reviewed in the January 1950 issue of *Soap and Sanitary Chemicals*, is now published by John Wiley & Sons, Inc., New York, and sells for \$8.50.

— • —

Quaternary Germicide Book

Surface-Active Quaternary Ammonium Germicides by Carl A. Lawrence. Published by Academic Press, Inc., New York. 246 pp. 6 x 9 inches, cloth binding, price \$6.00.

A review of the quaternary ammonium surface-active germicides is compiled in this text, which considers the history, chemistry, physical and chemical properties, and application of this group of compounds. The quaternary ammonium surface-active agents are particularly interesting because of their detergent, wetting, and surface-active action, in addition to their antiseptic properties.

Surface tension, detergent action, stability, synthesis, and compatibilities are among the properties discussed, with a thorough analysis of the biology of the compounds.

One chapter is devoted to the surgical application of the compounds; another chapter deals with the general disinfection uses; while still a third chapter covers the textile industry, laundry industry, some of the other industries, as well as a discussion on the manufacture of soap-like preparations.

A table of 100 quaternary ammonium germicides is included in the text, giving the trade name, chemical name, and distributor or manufacturer

of each product. Another valuable feature of this text, is a list of 550 references, compiling most of the articles dealing with the subject.

— • —

Chem. Eng. Handbook

Chemical Engineer's Handbook edited by John H. Perry. Published by McGraw Hill Book Co., New York. Third edition, revised. 1,942 pages, 7 1/4 x 9 7/8 inches, cloth binding, price \$15.00.

The third edition of Perry's handbook has been printed on a larger page size, allowing greater reading ease, and permitting larger graphs with resulting increase in clarity and accuracy of reading. The new page size also makes a book which is easier to handle, considering the bulk of the text.

The first few sections remain essentially the same, with a few changes such as five place logarithms instead of six place, and a Mollier chart of CO instead of CO₂. The other sections have been thoroughly rewritten and expanded, including up-to-date data, new apparatus, new methods, etc.

The section covering materials of construction has been thoroughly revised, and presents an excellent chemical engineer's table of chemical resistance of constructional materials. This table makes a good guide in solving corrosion problems in handling and processing methods.

Sections which have been rewritten and expanded include: Drying, Movement and Storage of Materials; Methods of Mechanical Separations; Solvent Extraction; Mixing; Fuels; Refrigeration; and Adsorption.

This third edition is well illustrated with new sketches, larger charts and full tables.

— • —

New Book on Polishes

Polishes by Dr. J. Davidsohn and A. Davidsohn. Published by Leonard Hill, Ltd., London. 176 pp., 5 1/2 x 8 1/2 inches, cloth binding.

A variety of polishes, including shoe, furniture, floor, metal, and motor car polishes, are discussed as to selection of raw materials for each type of
(Turn to Page 150)

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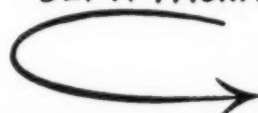


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PATENTS

The information below is furnished
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The data listed below is only a brief
review of recently issued pertinent
patents obtained by various U. S.
Patent Office registered attorneys
for manufacturers and/or inventors.
Complete copies may be obtained
direct from Lancaster, Allwine &
Rommel by sending 50c for each
copy desired. They will be pleased
to give you free preliminary patent
advice.

No. 2,508,578, Combined Soap
and Synthetic Detergent Bar, patented
by Donald E. Marshall, Summit, N. J.,
assignor, by order of court to Colgate-
Palmolive-Peet Company, a corpora-
tion of Delaware. A composite deter-
gent cake is patented comprising a

body of water-soluble fatty acid soap
having an exposed surface for produc-
ing a lubricating and grime disassoci-
ating lather with water, said soap
lather precipitating insoluble soaps
due to any hardness of the water, and
a body of solid water-soluble synthetic
detergent selected from the group con-
sisting of anionic sulfated organic
synthetic detergents and anionic sul-
fonated organic synthetic detergents
integrally secured to said body of soap
and having an exposed surface for
producing an insoluble soap dispers-
ing and water and oil interface break-
ing lather, said synthetic detergent
having the characteristic that its
lather promotes rinsing of said insol-
uble soaps and disassociated grime.

No. 2,509,440, Caustic Alkali
Detergent Composition, patented by
Lawrence L. Little, Morris Plains,
N. J., assignor to E. F. Drew & Co.
Inc., New York, N. Y., a corporation
of Delaware. The patent describes a
detergent composition comprising a
flake alkali metal hydroxide, particles
of a water-soluble compound taken

from the class consisting of phosphoric
acid, alkali metal ortho-phosphates
and alkali metal polyphosphates in an
amount less than the hydroxide, and
a sufficient amount of a liquid, water-
dispersible amine which is nonvolatile
at 150-180° F. to cause adherence of
the compound to the hydroxide.

No. 2,509,413, Method of Pro-
ducing Mono- and Diglycerides of Fat-
ty Acids, patented by George Barsky,
New York, N. Y., assignor to E. F.
Drew & Co. Inc., New York, N. Y., a
corporation of Delaware. A method of
producing mono- and diglycerides of
fatty acids is covered which comprises
providing a composition consisting es-
sentially of glycerides of a plurality
of fatty acids having an even number
of carbon atoms and which are higher
in fatty acid content than those to be
produced, adding a small amount of
boric acid thereto, heating said mix-
ture to a temperature not less than
about 250° C., maintaining said tem-
perature for at least one hour, whereby
lower fatty acids are freed from com-
bination, removing said lower acids by
distillation during said heating.

No. 2,509,197, Carbon Remover
and Metal Surface Cleaning Composi-
tion, patented by Ben Borus, Harts-
dale, N. Y., and George Ambrose



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Benzyl Benzoate	Nerolin	Phenyl Ethyl Alcohol
Benzophenone	Phenylacetic Acid	Yara Yara

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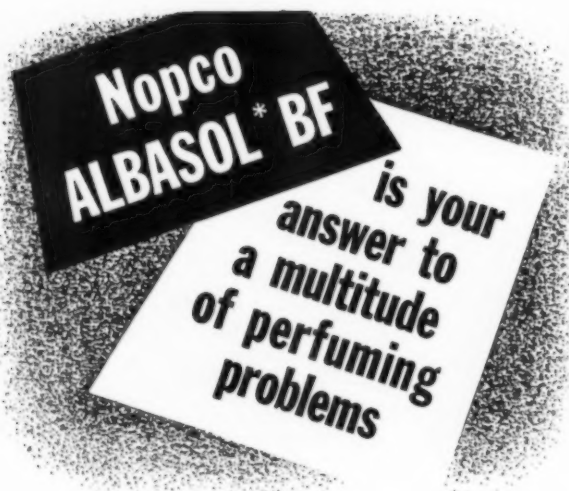
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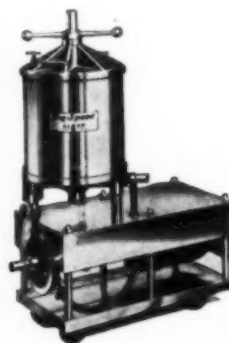


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Martin, East Alton, Ill., assignors to Shell Development Company, San Francisco, Calif., a corporation of Delaware. The patent covers a cleaning composition comprising a mixture of about 12 per cent to about 50 per cent by weight of kerosene, about 2 per cent to about 15 per cent by weight of an organic amine soap selected from the class consisting of ethylene diamine oleate and propylene diamine oleate, from about 20 per cent to about 40 per cent by weight of o-dichlorobenzene, from about 2 per cent to about 25 per cent by weight of a lower aliphatic diamine selected from the class consisting of ethylene diamine and propylene diamine, from about 10 per cent to about 20 per cent by weight of ethylene glycol monobutyl ether, and from about 10 per cent to 20 per cent by weight of water.

No. 2,507,207, Insecticide Comprising Cyclo-Diene Quinone Adducts, patented by Julius Hyman, Chicago, Ill. An insecticidal composition is described comprising an adduct of a halogenated quinone and a conjugated cyclic diene, distended in a carrier dust.

No. 2,508,335, Fungicidal Composition Comprising a 2,4,5-Trichlorophenyl Chloroacetate, patented by Clarence L. Moyle, Clare, and Richard H. Gruenhagen, Midland, Mich., as-

signors to The Dow Chemical Company, Midland, Mich., a corporation of Delaware. A fungicide dust composition is covered comprising a finely divided inert solid carrier and dispersed thereon as an active toxic ingredient a member of the group consisting of 2,4,5-trichlorophenyl monochloroacetate and 2,4,5-trichlorophenyl dichloroacetate.

No. 2,509,764, Insecticide Composition, patented by Gerarda Francisca Elisa Maria Dierick, Amsterdam, Netherlands, assignor to Shell Development Company, San Francisco, Calif., a corporation of Delaware. An insect control composition is described comprising an inert vehicle and dispersed therein at least two active ingredients, one being a dinitromethylphenol and another being the salt of a dinitromethylphenol and ammonia, the ratio of said ingredients being between 1:4 and about 3:2, said ingredients being present in amounts sufficient to render said compositions toxic to insect life.

No. 2,506,635, DDT Insecticide Dust and Process for Making Same, patented by Albert L. Flenner, Wilmington, Del., assignor to E. I. du Pont de Nemours & Company, Wilmington, Del., a corporation of Delaware. In a process for the manufacture

of a solid particulate dispersed system containing essentially technical DDT and an adsorbent powder, the step is patented comprising pulverizing an intimate particulate solid mixture of technical DDT and an adsorbent powder by attrition and impact to an average particle size less than 5 microns by suspending and buffeting the mixture in a high velocity gas stream.

No. 2,506,636, Insecticidal Dusts Containing 2,2-Bis (4-methoxyphenyl)-1,1,1-Trichloroethane and Process For Making Same, patented by Albert L. Flenner, Wilmington, Del., assignor to E. I. du Pont de Nemours & Company, Wilmington, Del., a corporation of Delaware. In a process for the manufacture of a solid particulate dispersed system containing essentially 2,2-bis-(4-methoxyphenyl)-1,1,1-trichloroethane and an adsorbent powder, the particles of said dispersed system having an average size less than about 5 microns, the steps are patented comprising suspending an intimate particulate solid mixture of di(methoxyphenyl)trichloroethane and an adsorbent powder in a high velocity gas stream and pulverizing mixture therein to an average particle size less than about 5 microns by impact and attrition of the suspended particles against one another and against retaining surfaces.

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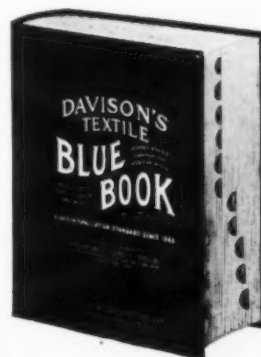
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Phosphates

(From Page 41)

and shampoos. However, instead of sodium phosphates, the potassium salts are used because of their higher solubility.

Tetrapotassium pyrophosphate was the first of the potassium polyphosphates made commercially available. This product has a very distinct advantage over the corresponding sodium salt, TSPP in that its solubility is much greater. This property allows preparation of more concentrated soaps. Its stability and peptizing properties are the same as those of TSPP, and the water softening characteristics are equal on a P_2O_5 basis. Data comparing the tetrapotassium and tetrasodium pyrophosphates are shown in Table II.

Tetrapotassium pyrophosphate is used for building potash soaps, where the sodium salt cannot be used since ion exchange would cause precipitation of the less soluble sodium soap. In liquid soaps, the tetrapotassium pyrophosphate, because of its calcium sequestering ability and excellent stability, is used to prevent cloudiness caused by lime salts. Such lime salts are usually introduced through the use of hard water or by attack on the glass container.

The newest arrival in the polyphosphate family is potassium tripolyphosphate. This interesting product is similar to sodium tripolyphosphate, but has the advantage of much greater solubility. Little work has yet been done with this product in the field of detergency, and it is currently available only in laboratory quantities. Its superior calcium sequestering value suggests that it may have an advantage over the potassium pyrophosphate in potash soap formulations and liquid shampoos. Some of the properties of potassium tripolyphosphate are compared with those of sodium tripolyphosphate in Table III.

Although a very limited amount of work has been done with this newest member of the polyphosphates, its remarkable solubility, ex-

cellent water softening ability, and its outstanding peptizing properties would seem to offer many possibilities for application in a wide variety of fields.

Conclusions

THE future outlook for complex phosphates is definitely favorable. On the basis of present day knowledge, we can say that their use is firmly established in the whole detergent field.

With natural soap production staying at a more or less constant level, any increase in demand for these highly effective detergent builders will directly parallel the rapid growth of the synthetic detergent industry. Table IV illustrates the significance of this tremendous expansion.

TABLE I

	TSPP	STPP
Empirical Formula	$Na_4P_2O_7$	$Na_6P_4O_{10}$
Molecular Weight	266.03	367.93
pH of 1% solution	10.1	9.7
Theoretical P_2O_5	53.4	57.9
Calcium sequestering value at pH 10-11 gms/100 gms.	4.7	13.4
Magnesium sequestering value (pH unadjusted, soap present) gms/100 gms.	8.3	6.4
Iron sequestering value gms/100 gms.	0.27	0.18
Equilibrium solubility		
at 25°C., Wt. %	6.1	15.3
at 60°C., Wt. %	19.75	16.2

TABLE II

	$K_4P_2O_7$	$Na_4P_2O_7$
Molecular Wt.	330.4	266.03
P_2O_5	42.9	53.4
Solubility, %		
at 25°C.	56.5	6.1
at 100°C.	68.7	35 at 82°C. (max. sol.)
Calcium Sequestering value gm. Ca/100 gm.	3.8	4.7
pH of 1% sol.	10.1	10.1

TABLE III

	$K_3P_3O_{10}$	$Na_3P_3O_{10}$
Molecular Weight	448.42	367.93
P_2O_5 , %	47.6	57.9
pH of 1% sol.	9.9	9.7
Calcium Sequestering value at pH 10-11, gm. Ca/100 gm.	12.3	13.4
Solubility at 30°C., wt. %	67	15.4

TABLE IV
Production of Synthetic Detergents*

Millions of Pounds	Synthetic Detergents
1935	44.9
1937	52.7
1939	66.8
1941	93.8
1943	115.1
1945	184.4
1947	401.7
1949	712.5

* Soap and Sanitary Chemicals. Feb., 1950, pp. 42; Mar., 1950, pp. 55.

Literature Cited

- (1) B. C. Hafford, Fred Leonard and R. W. Cummins, *Analyt. Ed. Ind. and Eng. Chem.* 18, pp. 411 (1946)
- (2) R. N. Bell, *Ind. and Eng. Chem.* 39, pp. 136-140 (1947).
- (3) A. B. Hersberger and C. P. Neidig, *Chem. and Eng. News* 27, pp. 1646-1650 (1949).
- (4) *Soap and San't. Chem.* 23, pp. 37-38 (1947).

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MGK allethrin, the long awaited synthetic substitute for pyrethrum, is now available.

To achieve consumer acceptance, MGK recommends that allethrin be introduced in combination with natural pyrethrins. Extensive tests indicate that allethrin is equal to pyrethrins in fly killing power and is superior in color, purity and stability. However, conservatism suggests that for the present allethrin can best be used with pyrethrins. Such combinations have proved to be equal to or better than pyrethrins alone, when properly formulated, and will relieve the current short supply of pyrethrum.

Certain synergists have shown unusual effectiveness when used with allethrin. The synergist MGK "264", used with allethrin, makes a satisfactory insecticide for roaches as well as flies and mosquitoes.

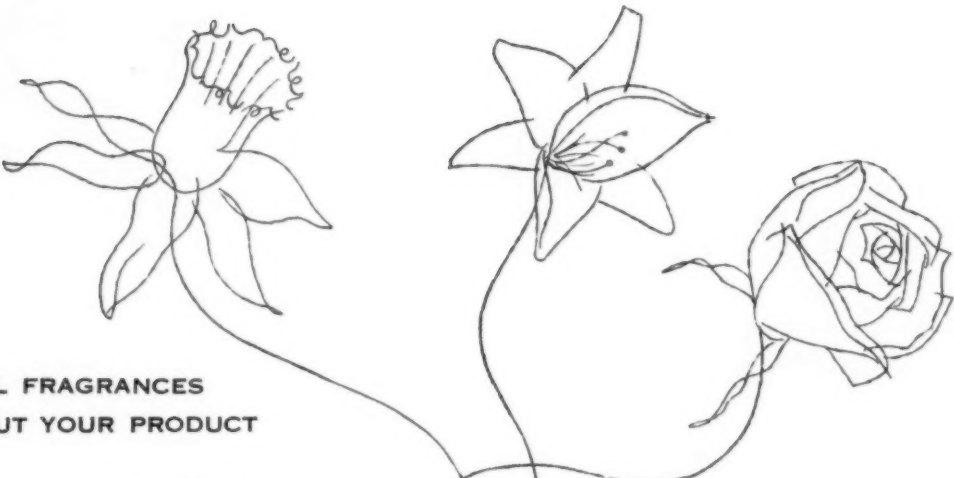
Specifically, we recommend you use MGK allethrin, "Pyrocide" 175 and MGK 264 in 1951 insecticide formulations. This will effect substantial savings while maintaining or increasing the quality of your products.

MGK allethrin is now available in good supply. As always, your assurance of quality and value is the MGK emblem. For more complete information on MGK allethrin or MGK's many other products and services, write 1713 Southeast Fifth Street, Minneapolis, Minn.

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D&O AEROSOL FRAGRANCES
PUT YOUR PRODUCT

**out front
on display
in demand**



Manufacturers of Room Deodorants, Insecticides, Formaldehyde Sprays, Detergents, Liquid Soaps, Polishes, Waxes and Cosmetic Products are all agreed they face keener, tougher competition in the days immediately ahead. These manufacturers also acknowledge the need for additional promotional and merchandising aids to make their products more acceptable, more saleable to the consumer.

Recognizing this need, the D&O Laboratories have developed a comprehensive series of tested Aerosol fragrances that are bound to add forceful, persuasive, compelling subtleties that will put your product...

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SANTOMERSE No. 1,
granular



BLEND, containing 40% granular Santomerse No. 1, 40% sodium tripolyphosphate and 20% soda ash.

Monsanto's new granular Santomerse No. 1 is produced especially to give makers of cleaning compounds a detergent that blends so perfectly with other ingredients that its identity is lost in the finished product.

Santomerse No. 1, granular, mixes thoroughly and easily with phosphates, silicates and carbonates, making mechanical blends that have less tendency to stratify. Working with Monsanto Tetra Sodium Pyrophosphate, Santomerse No. 1 delivers a detergency bonus through synergistic action.

Chemically, Santomerse No. 1, granular, is identical with Santomerse No. 1 flakes. It is effective in hot or cold, hard or soft water . . . in acid or alkaline solutions. It is a rapid wetter and an effective, all-purpose detergent that lifts out dirt and grease, holding particles in suspension so they are carried away in the rinse. Santomerse No. 1 rinses easily and thoroughly.

If you are interested in making a better detergent compound . . . easier . . . look into the possibilities of granular Santomerse No. 1. For information, mail the coupon or contact the nearest Monsanto Sales Office. MONSANTO CHEMICAL COMPANY, Phosphate Division, 1777-G South Second St., St. Louis 4, Missouri.

Santomerse: Reg. U. S. Pat. Off.

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NEW

MOTH-O-BLITZ

Kills moths, moth larvae, carpet beetles and certain other bugs!
MOTH-PROOFS a Year...for only a few cents

THERE IS NO "MOTH SEASON." Spring, summer, winter and fall the moth larvae grow fat on fabrics. This destruction of materials is continuous in all parts of the country... There is always a need for protection from these costly destroyers. MOTH-O-BLITZ contains Chlor-dane, Lindane, Tetralin and DDT

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It KILLS FLIES and other insects QUICKER!

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LABORATORY TESTS PROVE the new, High-Pressure Insect-O-Blitz to be the 100% Killer of flies.* It has been determined that the higher the pressure the more effective the spray. This higher pressure causes a much finer dispersion of insecticide particles which, because of their lightness,

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Nothing is more important in the packaging of your products than the protection of their purity, strength and other qualities. High in chemical durability, the glass package does not change your products. It will not leak, rust nor absorb moisture. Easy to open, easy to use, easy to reseal, it makes the most convenient package. The glass package may be transparent or not as required. It lends itself to individuality in size and shape hence is adaptable to any product. Preferred by consumers because it is safe, sanitary and convenient . . . by retailers because of its sales and merchandising advantages. Anchor Hocking Glass Corporation, Lancaster, Ohio.

Anchorglass^{*}

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Anchorglass Oval Ammonia Bottles are designed especially for safety, convenience, economy and display in packaging and merchandising household ammonia. Like all Anchorglass Containers, they are tough and durable—the result of carefully selected and controlled raw materials, consistency in manufacture, uniform glass distribution, accurate temperature control in annealing, quality control through laboratory tests and regular inspections. Anchorglass Oval Ammonia Bottles are available in 10, 16 and 32 ounce capacities. But regardless of what you package there are Anchorglass Containers in styles, capacities and colors that will meet your requirements.

ANCHOR^{*}

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Anchor C.T. Caps give economical, dependable, leakproof sealing. They are adaptable for use on a wide range of products which require airtight and liquid-tight sealing. Their scientifically designed deep-rolled thread improves holding qualities; permits ample clearance over the glass thread; prevents binding and gives spin-on action which results in fast, low-cost application. Deep, coarse knurls avoid interference with the top of the glass thread, permit free radial movement of the liner and provide a firmer gripping surface for application and removal. Anchor C.T. Caps are available in 20 sizes from 18 to 120 mm. Write us for more detailed information on the advantages and economies of Anchorglass Containers and Anchor C.T. Caps.

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"THE MOST FAMOUS NAME IN GLASS!"

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FOR HOUSEHOLD and DAIRY SPRAYS

Check these advantages . . .

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Allethrin is sold in technical grade or in formulations. Pyresyn 2% (allethrin) and Allexcel 20 (allethrin plus synergist) are our trade names for 20:1 concentrates with the above advantages.

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You can successfully employ this same cost-cutting combination in your own product. It's worth a try! The MM&R Technical Service Dept. will be glad to work with you in solving this—and other—deodorizing problems.

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It's not a Deodor-Scent if it's not labeled MM&R

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Perfume Oil B.L.S. MM&R (Delicate Lilac Character)
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INSECTICIDE SPRAYERS**

Spray effectively at distances up to 50 feet
Cover large areas quickly
Carry insecticides into high and hard-to-reach places

Here is a line of powerful sprayers for all oil-base or water-base insecticides which drive the solutions with such force that there is complete penetration into every crack and crevice. Ideal for reaching highly stacked stored materials—for spraying warehouses, grain elevators and similar locations.

Delivers a high volume of air at high pressure.

Three nozzles for fine, medium and coarse spray.

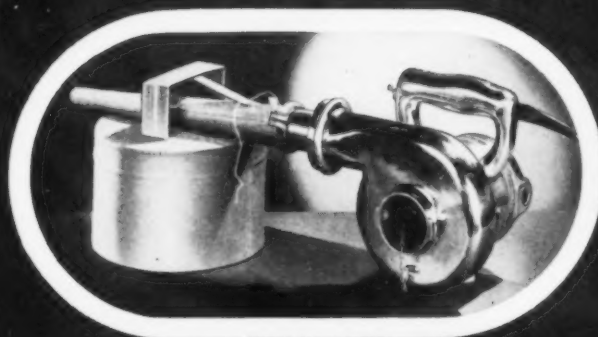
Completely portable. Easy to use and to handle, yet more powerful than any other portable sprayers. Constructed of precision machined aluminum. Handy toggle switch gives instant spray and on-and-off control. Plug into any convenient electric outlet. Equipped with 20 feet rubber covered cable. 1 gallon non-corroding solution container.

Available in sizes from $\frac{1}{3}$ to $1\frac{1}{2}$ H.P.

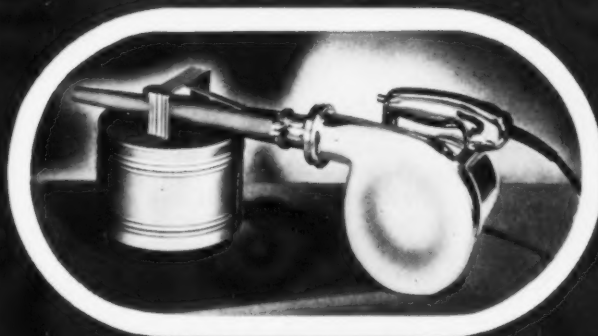
TORNADO® Model 59—DUSTITE approved by Mill Mutual Fire Prevention Bureau for hazardous locations

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TORNADO® Model 48



TORNADO® Model 59 DUSTITE

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Manufacturers of Precision Insecticide Sprayers Since 1928



There's plenty of room for

your

product in the aerosol picture

Every day more products are being packaged for the expanding aerosol market. Among those already available are such varied items as household and personal deodorants, insecticides, insect repellents, auto waxes, mothproofers, paints, plastic coatings, cosmetics and many others. And here's good news. These and other new aerosols are getting a warmer welcome from buyers today than ever before . . . with no sales limit in sight!

Now is the time to act

Plan now to secure a profitable position for your aerosol-packaged product. More than likely you can market aerosols without making a single change in your distribution setup. For recent surveys indicate that principal outlets for aerosols are drug stores, department stores, hardware stores, food stores, gasoline stations, feed and seed stores, variety and dime stores.* This "tailor-made" market is ready and waiting for the introduction of new aerosol products.

Safety rings up the sale

When you consider aerosol-packaging your prod-

uct, you'll find it pays to choose safe, dependable propellents. For surveys also show that among customers' reasons for buying aerosols, *effectiveness* is the first consideration . . . *safety* an important second. And both factors are directly related to the quality of propellent used.

"Freon" propellents are safe!

They're nonflammable, nonexplosive and practically nontoxic . . . harmless to foods, furs, flesh, fabrics and finishes. They have no color or taste and are practically odorless.

There's plenty of room for your product in the picture, but be sure to specify "Freon" safe propellents for it. You can readily select "Freon" propellents to meet aerosol pressure requirements . . . high or low. And remember: these propellents are unsurpassed for safety and satisfaction.

***FREE!** Your own digest copy of Kinetic's important survey of the aerosol market. Write: Kinetic Chemicals, Inc., Tenth and Market Sts., Wilmington 98, Del.

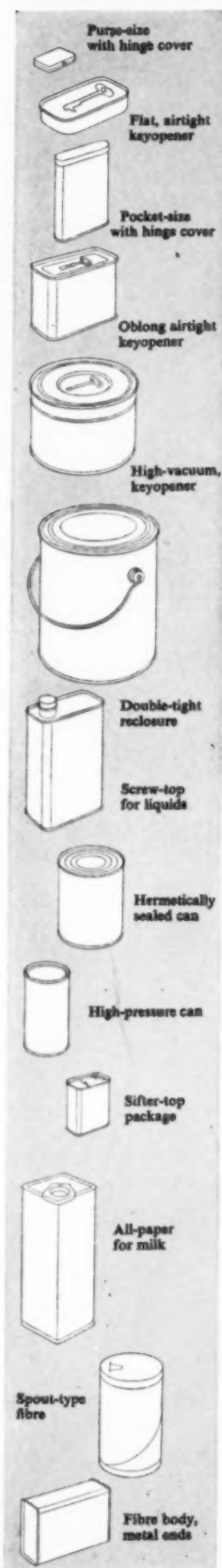


"Freon" is Kinetic's registered trade-mark for its fluorinated hydrocarbon propellents.



"FREON" SAFE PROPELLENTS

**WHICH PACKAGE
SUITS YOUR PRODUCT?**



LOOK... one hand!

You know it best as a pocket, purse or bed-table container for tablets—the tiny tin that flips open and snaps shut at the press of thumb and finger!

What you may not know is that this same "magic corner" closure, so popular with millions of Americans, is available in an exciting variety of larger size metal boxes, each offering your product a new consumer appeal!

The "flat-fifty" cigarette box, for instance. Consider it as a possibility for crayons; for tissues; water color paints; lolly-pops—even panatela cigars. Flat as your wallet, it fits snugly into purse, pocket, brief case or the glove compartment of your car.

Many sizes... a legion of uses

Other Canco metal boxes with the "magic corner" closure are deeper, wider, longer, smaller. In fact, almost any rectangular shape or size can be custom-made if we do not have the exact size you require.

Each box opens to display entire contents; closes tight to prevent spilling. Each can be lithographed for big display of your brand name and message. All can be filled automatically and fast.

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In the creation of new and more effective packages, Canco has been out front since 1901. *Better Call Canco First!*



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LEADING manufacturers in the fields of floor waxes and other floor finishes, disinfectants, sanitizers, soap and detergent specialties, household insecticides and moth products, aerosol specialties of all types, and allied chemical specialties are members of CSMA.

Large and small, old and new, these leading firms have comprised the membership of CSMA (formerly National Assn. of Insecticide & Disinfectant Manufacturers) for over 35 years.

The newly expanded activities of CSMA may have interesting advantages for your company. Dues are moderate; services and contacts valuable. If we can give you further information about membership, we shall be glad to do so.

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Here's good news for manufacturers of sanitary specialties! Paradow is now available in sufficient quantity to meet your requirements. This highly adaptable product—pure, crystalline p-dichlorobenzene—has the important advantage of great ease in molding and packaging. It conforms in every way to traditional Dow standards of quality and uniformity.

Packed in 25, 50, 100 and 200 pound drums

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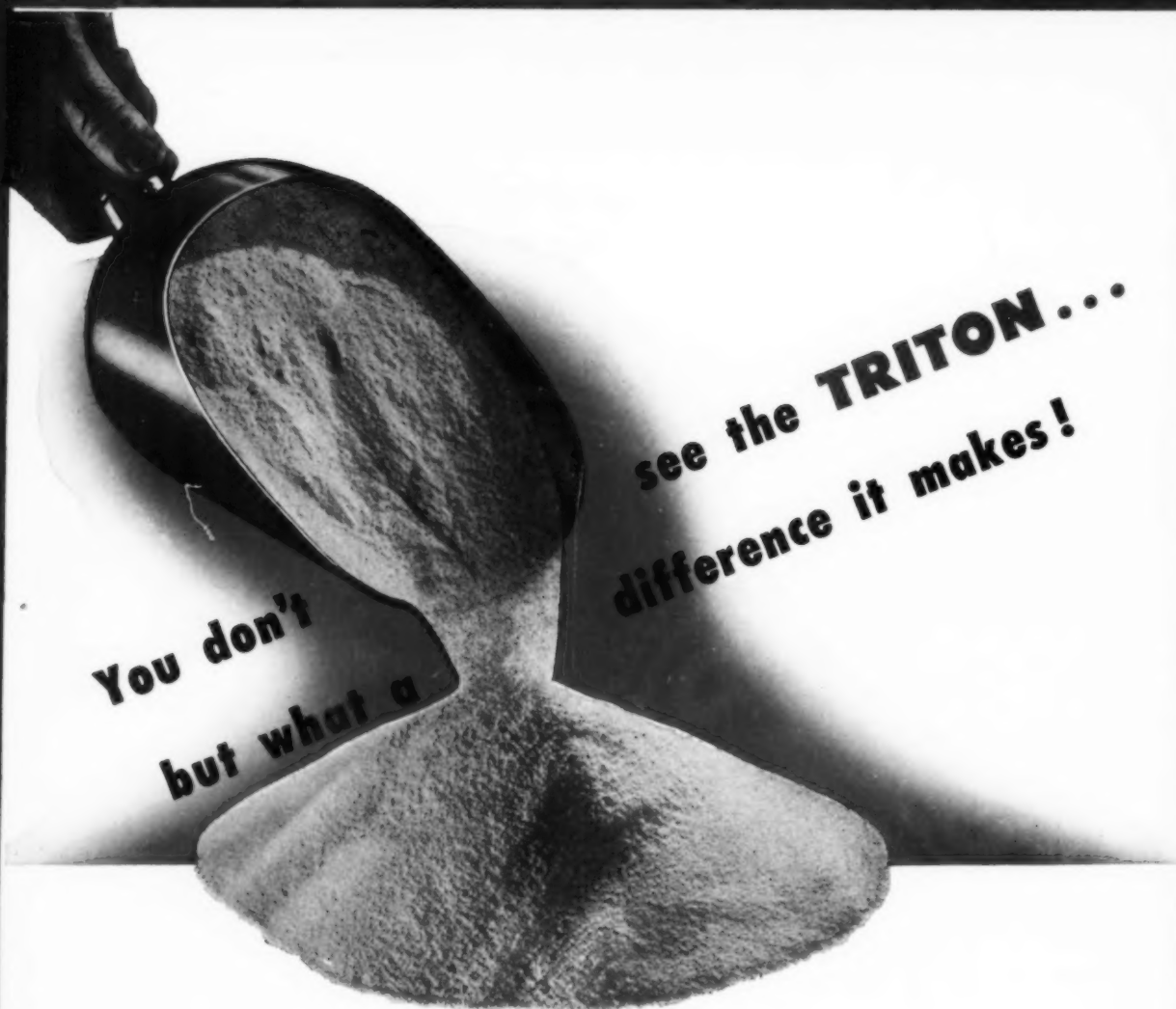
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**INDISPENSABLE TO INDUSTRY
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**You don't
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**see the TRITON...
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TRITON X-100 *does* make a difference in products
—and profits.

From 3% to 5% of TRITON X-100 added to your balanced alkali formulation gives you a better, faster, foaming cleaner—with exceptional ability to emulsify grease and remove oily deposits from hard surfaces. Makes your cleaner *sneeze-proof*, too, and assures a more uniform blending of its ingredients.

TRITON X-100 is another member of the TRITON family that can help you make better products. Whether you manufacture cleaners or cosmetics, emulsion concentrates or household detergents, you'll find it good business to try the TRITONS.

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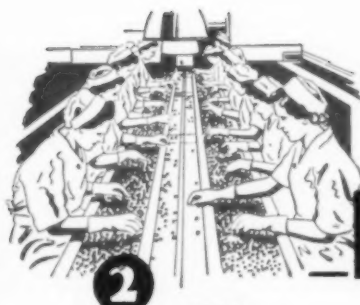
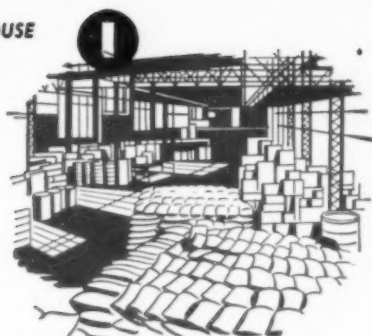
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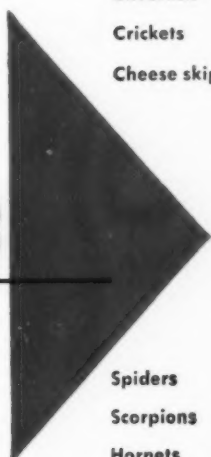
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WAREHOUSE



FOOD
PROCESSING PLANT

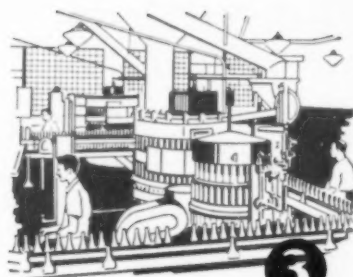
pick your pests



Chocolate moths
Cadelles
House flies
Fruit flies
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Ants
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Cheese skippers and mites



Pyrenone—
base insecticides
control them all—
yet they're non-toxic
to humans!



BOTTLING PLANT

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Confused flour beetles
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Rice weevils
Saw-toothed grain beetles
Spider beetles
Angoumois grain beetles
Mediterranean flour moths
Meal worms
Cigarette beetles
Drugstore beetles
Grain mites

Insecticides based on Pyrenones are *doubly economical* for pest control around foodstuffs —

• They are effective at economical concentrations against an extremely wide range of insects.

• Their combination of safety and convenience makes shorter work, faster work of insect control.

Pyrenone-based *area-type* sprays provide fast, positive knockdown and kill . . . time-saving convenience . . . freedom from toxicity, skin irritants and objectionable odors. Pyrenone-based *residual-type* sprays combine safety, effectiveness, and long-lasting protection to a greater degree than any other insecticide we've tested.

*Reg. U.S. Pat. Off.



If you'll tell us briefly what your food insect control problem is, we'll be glad to give you further information about Pyrenone-type insecticides.

INDUSTRIAL CHEMICALS, INC.

60 East 42nd Street, New York 17, N. Y.

Branches in all principal cities

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Deluxe *S-D SANITIZING CLEANER

***Sanitizing - Deodorizing**

The *all-around, neutral, self-rinsing cleaner* . . . for all general cleaning, sanitizing and deodorizing in the home, office or plant. Non-injurious to the skin, effective and safe to use.

Deluxe *S-D Cleaner will be popular with the trade because it aids in preventing the spread of disease germs, is easy to apply, odorless, attractive in color (opalescent), economical and safe. Absorbs obnoxious odors without leaving a masking odor.

Deluxe *S-D Cleaner can be used *anywhere and any time* because it is *effective even in cold or hard water*. This feature is a great plus in sales appeal. For more details about Deluxe *S-D Cleaner write us immediately.

**At last here's a cleaner
that gains good results
on ALL types of floors,
INCLUDING RUBBER
AND ASPHALT TILE!**

SEND FOR LATEST PRICE LIST CONTAINING A WIDELY DIVERSIFIED LINE OF BAIRD & MCGUIRE CERTIFIED PRODUCTS.



THE ONE
AND ONLY . . .

Baird & McGuire, Inc.
HOLBROOK, MASSACHUSETTS

CREATORS AND COMPOUNDERS OF THE BEST IN CLEANERS AND DISINFECTANTS FOR OVER 41 YEARS

SANITARY PRODUCTS

A SECTION OF SOAP

THE recent passage of the Sabbath resolution authorizes the appointment of a committee of seven by the Speaker of the House of Representatives to direct and conduct a full and complete investigation and study the use of various compounds and chemicals in the production, processing, preparation and packaging of food products. The appointment of the seven-man committee authorized by the resolution is expected to take place shortly.

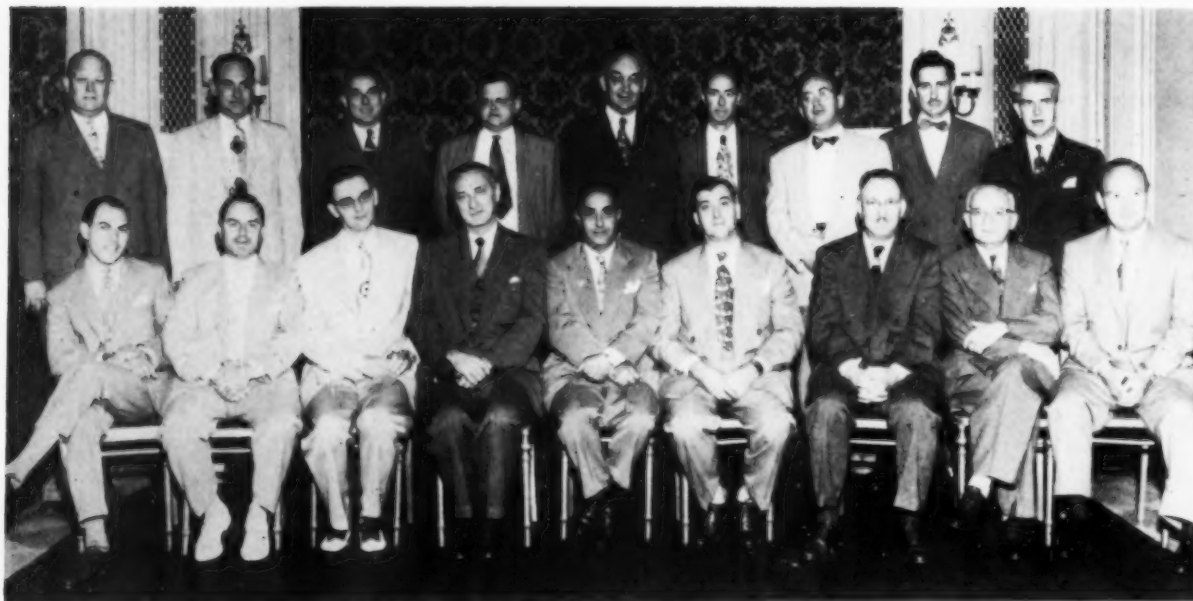
Just where this move by the House will lead is of course not yet clear, but a fair prediction is that it will be in the direction of scare stories in the press and confusion in the mind of the public. The immediate question which has been posed by those most closely in touch with the problem is, "Why is it necessary for the House to investigate a topic which is currently engaging the attention of the assembled brains of the U. S. Department of Agriculture, the U. S. Food and Drug Administration and the entire commercial insecticide industry?"

We have an idea that these agencies are much better qualified than seven Congressmen, untrained in technical matters, to solve the problems involved. In any case, should the House wish to exercise its prerogatives, it would seem the part of wisdom to wait at least until the toxicity hearings now in progress are over, and all the evidence is in. But, Congressmen being what they are, and their love of investigating something or anything for that matter, being what it is, we venture the prediction that the committee will be deep in unfamiliar chemical, entomological and toxicological matters before long. The best of luck to the intrepid investigators, — to the insecticide industry, and to the public. They'll all need it!

DO flies that develop resistance to insecticides retain this acquired resistance generation after generation, even when they have been withdrawn from exposure to these insecticides, or do they in time lose this acquired resistance and again become susceptible to the insecticides? Until just a few weeks ago entomologists thought they had the answer to this question, — that the exposed flies do not lose their acquired resistance even after many generations of non-exposure. Findings which pointed in this direction were reported by Metcalf and March in their paper at the recent Chicago meeting of the Chemical Specialties Manufacturers Association.

Since the Metcalf and March paper was presented, however, conflicting results have been noted in other test data and these same workers now report that their "most recent resistance tests with the Bellflower strain (of test flies) have shown a trend toward an increase in the number of more susceptible flies in comparison with the number of highly resistant individuals." A warning is given against placing too much faith in what are as yet only preliminary findings, and it is pointed out that "a considerable number of tests on further generations will be necessary to confirm and clarify this trend."

The possibility is evident, however, that flies which have developed super resistance to various insecticides such as DDT may lose this resistance and again become susceptible to control after use of the material is suspended for a time. If this trend is confirmed, it will make the job of the entomologist and the insecticide manufacturer much easier. Future control recommendations may very possibly be in the direction of alternating the various effective materials on a periodic basis.



Officers, board members and chairmen at Governors' Meeting.

C.S.M.A. Mid-Year Meeting

THE major emphasis was on new developments in papers presented at the 36th mid-year meeting of the Chemical Specialties Manufacturers Association, held June 12 and 13 at the Drake Hotel, Chicago. With the registration figure put at approximately 542, the meeting was one of the best attended mid-year gatherings in the history of the organization. Large and attentive attendance at various concurrent divisional meetings was also characteristic.

While discussion covered a wide range of topics pertaining to sales, management and industry matters, recent technologic developments were stressed. These were highlighted by symposium type presentations on allethrin and recent progress with aerosols. In addition, there was a symposium on fatty acids and another on new developments in household insecticides.

Other meeting highlights were furnished in individual papers by industry representatives, government people and other guests on toxicity, insecticide resistant flies, the work of the American Medical Association's committee on pesticides, the wax situ-

ation, and new developments in disinfectants and sanitizers.

Meetings of the association's board of governors, insecticide, soap, detergent and sanitary chemicals and disinfectant scientific committees; various divisional administrative committees, committees on antiseptics, disinfectants and sanitizers, the waxes and floor finishes marketing committee and the insecticide chemical analysis committee rounded out one of the most ambitious programs ever undertaken by the group. Most of the committees met June 11.

The meeting opened with a general session the morning of June 12. Leonard J. Oppenheimer, of West Disinfecting Co., Long Island City, New York, opened the meeting with his address as president. He was followed by H. W. Hamilton, H. W. Hamilton Co., New York, who presented his secretary's report. Peter C. Reilly, Jr., of Reilly Tar & Chemical Corp., Tuckahoe, N. Y., presented his treasurer's report, followed by C. L. Rothermel, National School Service Institute, Chicago, who discussed cooperative buying. He warned that while

some manufacturers and distributors favor the idea originally because it means large individual orders from one rather than a multiplicity of purchasing agencies, actually the idea does not work out that way at all. Rather, he said, orders are placed for sizeable quantities of merchandise, but shipments are to be made to a number of individual users. Thus, profits that might be realized by selling through a central purchasing agency are dissipated by the costs involved in shipping to a number of different points. Since prices quoted on goods purchased through one agency are apt to be lower than for goods bought by a number of smaller individual units, profit margins are shortened to the point where increased shipping costs take almost all of the profit out of the transaction. The speaker cited the case of a southern state, which had set up cooperative purchasing for its school system as an example of the disadvantages to a manufacturer or distributor of such a program.

The report of the C.S.M.A. committee on toxicity, presented by C. W. Kearns, department of entomology,

University of Illinois, covered the background of the formation of the committee, the work it is attempting to do and the meetings of the group with members of the committee on pesticides of the American Medical Association.

The next speaker, Bernard E. Conley, secretary of the committee on pesticides of the American Medical Association, described the work and program of his committee. The program of the committee Mr. Conley outlined as follows: 1.) To promote safe standards for use of pesticides; 2.) foster the development of antidotal measures; 3.) stimulate voluntary control; 4.) assist in the standardization of nomenclature; 5.) accumulate and evaluate new information and 6.) undertake an intensive educational program.

Mr. Conley stated that the committee has developed plans for an intensive educational program directed both to the profession and the public. A series of reports reviewing the various pesticides in common use is under consideration, he said, the first of which is scheduled for release shortly. A mechanism to coordinate and integrate the continuous stream of data on pesticides which is constantly being released is being developed to augment the educational program, the speaker said.

The final speaker of the general session P. B. Morehouse, associate director of the Bureau of Industry Cooperation and Chief of the Division of Trade Practice Conferences, Federal Trade Commission, discussed, "Do's and Don'ts in Advertising." Mr. Morehouse discussed the recent hearings of trade practice rules for the floor wax products industry, predicting that in spite of industry opposition such rules will be set up, after they are submitted to the industry. He also discussed the reorganization of the F.T.C. and its operation. He cited instances within the industry of recent stipulations, advising how these could be avoided. He listed the types of misleading advertising claims, concluding that the Commission "is attempting to approach these problems with a complete willingness to listen to all

viewpoints with a sympathetic attitude and a sincere desire to adjust as many problems as possible cooperatively."

Following the first of the two group luncheons, separate and simultaneous meetings of the five divisions within the association were held. The Aerosol Division meeting opened with a statement of the aims and purposes of the division, presented by H. E. Peterson of Continental Filling Corp., Danville, Ill. He pointed out that the purpose of the division "is to develop and disseminate all technical data pertaining to the so-called aerosol field." In addition, he said, "It provides an organization through which all reputable individuals or firms engaged in or allied with the manufacture or distributing of aerosol products may be united for the purpose of sponsoring scientific research, collecting and disseminating items of interest to members of this industry, promoting the use of aerosol products through cooperative advertising and other similar means, and for the purpose of promoting the mutual interest of the members by any other lawful method of cooperation."

The first speaker at the meeting, R. C. Downing of Kinetic Chemicals, Inc., Wilmington, presented a paper entitled: "Aerosols—1.) Stability; 2.) Insecticide Solubility." The paper begins on page 114 of this issue.

A symposium dealing with "New Developments in the Aerosol Field," the next presentation, was presided over by H. R. Shepherd of Connecticut Chemical Research Corp., Bridgeport. The first paper of the group, "What's New in 'Freon' Propellents?" by Edmund G. Young of Kinetic Chemicals, described a new propellant, "Freon 114," which is recommended for use with "Freon-12," particularly for cosmetic applications.

George Stribling of General Chemical Division of Allied Chemical & Dye Corp., New York, the next speaker, discussed the "Genetron" series of low pressure propellents in a talk entitled "New Developments in 'Genetrons' as Aerosol Dispersants."

"Nitrous Oxide, Carbon Dioxide and their mixtures as Propellents,"

the next paper in the symposium, was presented by William Strobach of S. S. White Dental Manufacturing Co., who discussed the use of these materials with particular reference to their application in food products.

In the paper, "Aerated Products Valves, Daniel Michels of Dairy Whipt Corp., Chicago, pointed out that aerated products valves are of two types. 1.) The aerosol, or spray type valve, and 2.) the flow or fluff valve. He limited his discussion to the latter type, covering the characteristic problems encountered with such valves.

Aesthetic considerations in the design of an aerosol package, particularly for cosmetic items, were discussed in a talk entitled, "The Aesthetic Aerosol Package of the Day," by Robert L. Langdon of Victor Aerosol Container Corp., Brooklyn. Since women do the majority of the retail buying in the U. S., the cosmetic package cannot be bomb-like, large, bulky or heavy, but rather has to conform to the principles of modern packaging if it is to have a place, the speaker said.

Considerable improvement in coatings, inks and mechanical applications has been made for aerosol containers for the cosmetic industry, according to W. E. Graham of Crown Can Co., Philadelphia, concluding speaker of the aerosol symposium. In his paper, "Recent Developments in Seamless Pressure Containers," he stated that the "new pressurized products are being packaged in containers which are on a par with the high decorative level of the cosmetic industry."

In outlining the aims and purposes of the Disinfectants and Sanitizers Division, Dr. E. G. Klarman of Lehn & Fink Products Corp., Bloomfield, N. J., stated that they are those of the Chemical Specialties Manufacturers Association as applied to the needs and problems of the members engaged in the production of disinfectants, sanitizers and related materials.

A study of the resistance of textiles to insect pests was described at the Insecticide Division meeting, June 12, in a paper by George R. Ferguson of Geigy Co., New York. The paper, entitled, "Tentative Methods of Test for Resistance of Textiles to In-



sect Pests," reported on the results of a questionnaire sent to extension entomologists in the 48 states. Their recommendations for control measures included: DDT insecticides (in 16 states); DDT or chlordane or a combination of the two (16 states); chlordane spray (one state). As supplementary measures or alternate controls, 14 states emphasized sanitation and good housekeeping; 11 included moth balls or flakes, seven suggested storage and a like number recommended fumigation.

Disinfectant, sanitizers section

At the first session Monday afternoon of the disinfectant and sanitizers division, A. G. Bowers, chief chemist, Hunt Mfg. Co., Cleveland, O., reported steadily growing use of G 11 soaps in homes. Hospitals have effective germicidal control regimes, but it is hoped, he said, that increasing interest in G 11 soaps can be developed in industrial plants and elsewhere.

G 11, Dr. Bowers said, is the first ingredient for use in germicidal soaps which can be used effectively with a large ratio of soap to a small proportion of germicide. Ratios of from 1:15 to 1:10 can be tolerated, he stated. No flaws have been found in practical use and there has been no build up of germs resistant to G 11. The fact that only a few cases of irritation have been reported, was suggested as due to G11's inability to be absorbed by the skin. There is, however, a need for a clearer understanding by the public of the soap's unique value, but not from the price standpoint.

Discussing "Microbiological Cleanliness of Dishes Washed with an Anionic Detergent Under Practical Conditions," Lawrence Flett, director, new products, Nat. Aniline & Dye Div., Allied Chemical & Dye Corp., recalled how dishes used to be considered clean when they looked it. Public health authorities, however, have been increasingly concerned with the number of bacteria on seemingly clean dishes, a situation which constantly confronts manufacturers with problems in meeting the higher standards of cleanliness.

No reliable tests have been de-



veloped, he asserted, to determine the presence of residual bacteria and, while the swab test is accepted, it is open to error. He reported in detail on a laboratory study, conducted jointly with Albert F. Guiteras, in which hand dishwashing was simulated and bacteria were introduced into the water.

In restaurant dishwashing, bacteria are constantly being added to the water, he pointed out, but conditions approaching sterility were found when

his company's product, Nacconol, was used. The laboratory tests which he had outlined gave values not comparable to practical restaurant conditions, he said, but the tests were a useful method for comparing products.

Characteristics of a Bersworth Chemical Co. product, "Versene," and its effects when used with quaternaries were described by Dr. J. J. Singer, in a paper prepared jointly with Frederick C. Bersworth of this Framing-

ham, Mass., concern. Best results with quaternaries, he pointed out, are attained when used with soft water. Versene has been in wide use for many years and because of its stability, one of its first extensive applications has been as a water softener.

In the considerable work done with Versene and quaternaries, it was found that Versene is not toxic to bacteria, but "puts them in condition to be killed by starving them." Tables presented showed how, in tests, the presence of Versene in a quaternary gave kills up to 100 per cent. This, he said, indicated promise in the field of sanitation. Manufacturers of sanitizing agents, he added, can compound them with quaternaries with assurance that efficiency will be high, despite varying hard water conditions.

Versene, he summed up, can be introduced without difficulty; it will not affect the quaternary's clarity and, the effect lasts indefinitely. Some formulations are costly, but this is outweighed by the advantages of the product.

"Hotel Sanitation" was the subject of a paper by H. M. Toombs, chief engineer of the Stevens Hotel, Chicago, in which he criticized mildly some phases of the sanitary supply industry. He complained, for instance that washing compounds are packed in the largest and heaviest drums and can only be moved around on dollies. In the Stevens kitchens effective use is made of sanitation chemicals by putting all equipment and furniture on casters, but what is urgently needed, he declared, is a machine for cleaning garbage cans.

Dr. Arthur R. Cade of Givaudan-Delawanna, Inc., in a paper accompanied by motion pictures, described a simplified method for evaluating antiseptic soaps. In his skin degerming procedure, he said, a 91 per cent reduction was normal for G 11 soap.

"Studies on Insecticide Resistance of Flies and Mosquitoes" were reported on in a paper by E. F. Knippling, in charge of the division of Insects Affecting Man and Animals, U.S.D.A.

He was followed by Ralph B.

March of the University of California, who discussed "Insecticide Resistant Housefly Studies in California." Dr. March's paper begins on page 121 of this issue.

The concluding feature of the Insecticide Division meeting was a report by John D. Conner, general council for C.S.M.A. on the toxicity hearings being conducted by the Food & Drug Administration in Washington. After reviewing the background of the hearings, Mr. Conner pointed out that over 200 witnesses have testified since the opening of the hearings Jan. 17, 1950. The majority of the testimony has related to the insects to be controlled, the damage done by these insects, the control obtained by the use of various insecticides and fungicides, and the residue problem. All of the testimony thus far presented has been concerned with the necessity for use of insecticides, fungicides, etc. The larger part of this testimony has been presented by witnesses from the various federal and state experiment stations and the state universities, Mr. Conner said. It is upon the basis of this evidence that the Administrator must determine which insecticides and fungicides are required for the production of the various fruits and vegetables.

The phase of the hearing relating to the toxicity of the various compounds is scheduled to begin on July 10.

A symposium on "The Uses of Fatty Acids and Composition Specifications," with A. G. Peck of Pecks Products Co., St. Louis, as moderator, was the feature of the Soaps, Detergents and Sanitary Chemical Products Division meeting. Participating were: D. H. Wheeler of General Mills; L. Sutger of Wilson-Martin Co.; R. A. Behrman of Emery Industries; J. Dudley Ransom of Woburn Chemical Co.; S. Zinzalian of E. F. Drew & Co.; R. E. Wieck of A. Gross & Co.; F. E. Lacey, Swift & Co.; W. G. McLeod, W. C. Hardesty Co.; W. G. Andrews, Archer-Daniels-Midland Co. and J. Whitler of Armour & Co. The discussion, in question and answer form, was divided into two major sections: stor-

age problems and fatty acid composition and soaps.

Q. Among the questions asked and the answers given were: "What are the factors involved in the discoloration of fatty acids at high temperatures?"

Ans. The amount of metal contained; natural color or color generating properties; extent of air contact; nature and amount of unsaponifiable matter; local overheating; type of container in which material is shipped or stored; type of raw material used; length of time of agitation—more air in, more discoloration; high temperatures in melting, particularly if done rapidly; make up any type of material used to produce the fatty acid.

Q. What may be added to fatty acids to stabilize them against discoloration under heat?

Ans. It was the consensus that there is nothing that can be added to improve stability. It is necessary to handle fatty acids as outlined above.

Q. Does storage of fatty acids in unlined tanks (i.e., iron) cause appreciable change in the acids during a six months storage period? If so, what changes, taking various temperatures into consideration?

Ans. Fatty acids stored in iron tanks change in color depending upon the amount of heat to which they are subjected. The higher the temperature, the faster the rate of discoloration on reaction with an iron tank. Previous history and usage of the tank are also factors.

Q. When fatty acids are stored in a tank and used in relatively small amounts each day, is it better to: (A) keep the acids liquid under moderate heat; (B) Heat the tank and draw off a month's supply, allow the tank to remain unheated until more is needed, then reheat for another draw off?

Ans. It depends upon whether the tanks are indoors or outside, and whether or not they are insulated. Bulk storage of over six months is liable to result in a total loss. There is a gradual decline in the quality of the oil and its end products. A great deal depends upon the amount of material used. It is pointless to have bulk storage if fatty acids are used only in small amounts. If bulk storage is practised it is desirable to remove the older material when adding the new.

Q. Does it make any difference whether fatty acids are stored in vertical or horizontal tanks because of possible greater separation of the constituents of the fatty acids into layers?

Ans. If material is stored in liquid condition at all times, it makes no difference whether the tank is vertical or horizontal. If the material is allowed to cool, there would be a difference. The size of the tank is also a factor. The vertical type is preferred to the horizontal tank because of the air factor.

Q. Is it practical, and if so, more expensive to purchase fatty acids blended in a definite ratio than to purchase the fatty acids (such as coconut, soyabean and corn) separately and blend them in the

(Turn to Page 127)



SILICONE Car Polishes

OVER five years ago the Dow Corning Corporation started to develop a market for silicones as a car polish ingredient. Laboratory formulations which showed greatest promise were presented to the industry. Now, after extensive consumer research and testing, silicone car polishes have arrived nationally, bearing emphatic claims for quick application, high resistance to dirt, easy washability and a durable, sparkling finish.

These claims stem directly from the unique properties of the silicones themselves. Developed by Corning Glass Works in the thirties and first produced during the war by Dow Corning, silicones are semi-organic compounds which effectively combine the stability of inorganic with the

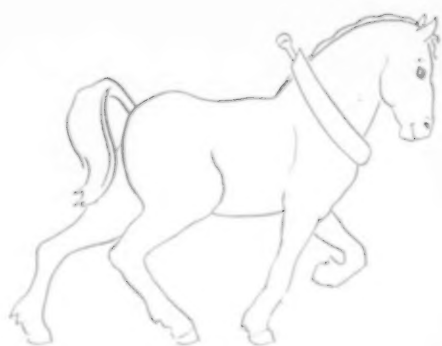
desirable flexibility of organic materials.

Essentially, silicones are long-chain polymers based on a silicon-oxygen linkage with attached organic radicals. This silicon-oxygen tie, half again as strong as the carbon-to-carbon link characteristic of organic materials, accounts for the quartz-like temperature and chemical stability of the silicones. The attached radicals give them variability, ease of handling, and water-repellency. Cross-linking, plus the selection and distribution of radicals, plus the addition of fillers, determine the physical properties of silicones in the form of fluids, greases, compounds, resins, rubbers or solid plastics.

Proof of the advantages of silicone car polish is seen indirectly in

some of the other silicone products now in use. Each emphasizes a certain silicone property, and each is designed to meet specific applications better than any competing material on the market. Water-repellency, for example; a very important property in silicone car polishes. Silicones are the most water repellent materials on the market. When applied to synthetic fabrics such as nylon, rayon, acetate and orlon, these materials retain 90 to 100% of their initial water repellency even after as many as 10 (24?) dry cleanings. Even open-weave marquisette sheds water without losing any of its porosity.

Silicone-based car polishes are also more durable than conventional oil or wax-based polishes because silicones themselves are more temperature-



Onyx BTC*

Cationic Germicide and Deodorant

By Itself ... is the most dependable quaternary for sanitization purposes.

- the original cationic germicide, thoroughly tested and documented.
- no toxicity or skin irritation to worry about.
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- a 50% aqueous solution of alkyl dimethyl benzyl ammonium chloride ... stable, uniform, dependable.

You'll never go wrong when you specify BTC* for your sanitizing and deodorizing formulations. For the complete story, write for the BTC* booklet.

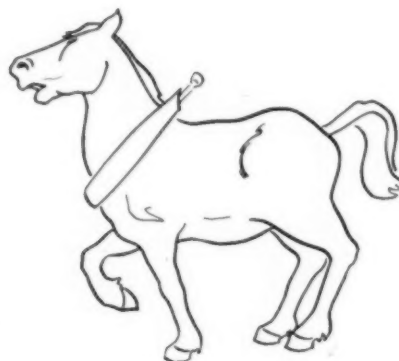
Neutronyx 600...

Non-Ionic Detergent and Wetting Agent

By Itself ... one of the most effective and dependable detergents, wetting and emulsifying agents now available.

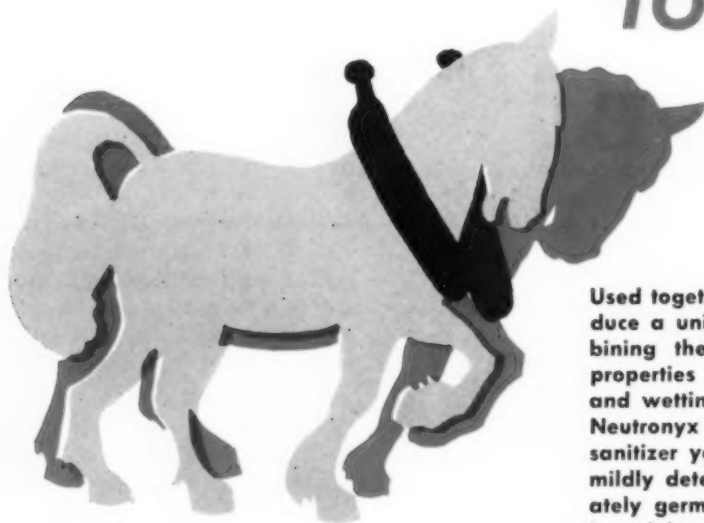
- Compatible with acids, alkalis, electrolytes, hard water and cationic and anionic surface-active agents.
- Usable at elevated temperatures because of its low volatility.
- Chemically stable. Will not deteriorate in storage.
- An aromatic polyglycol ether with a host of potential uses in the formulation of industrial and household cleaners, and for economical wetting and emulsifying action wherever required.

You won't go wrong when you specify Neutronyx 600. Write for the 600 booklet.



TOGETHER...

**Detergent
Sanitizers to meet
your special
requirements!**



*Trade Mark Reg. U.S. Pat. Off.

Used together, Onyx BTC* and Neutronyx 600 produce a unique series of detergent sanitizers, combining the superior germicidal and deodorizing properties of BTC* with the effective detergency and wetting, emulsifying and dispersing action of Neutronyx 600. You can get any type of detergent sanitizer you want, from the strongly bactericidal, mildly detergent, to the heavily detergent, moderately germicidal. We are ready to work with you in arriving at the combination which will best meet your needs.



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A Dow-Corning report on use of the silicones in car polishes. They feature quick application, high resistance to dirt, easy washability, and a durable sparkling finish. Sales are booming.

stable than oil or wax. Silicones do not melt at temperatures in the range of 500° F., nor do they freeze at temperatures far below zero. "Silastic," the Dow Corning silicone rubber, has brittle points in the range of -70 to -130° F. and still stays rubbery at temperatures above 500° F. Usefulness over a temperature range of 500° F. has been established in many industrial applications for silicones in the form of resin, oils, and greases, as well as in solid rubber or molded plastic parts.

Silicones also show exceptional resistance to outdoor weathering. Resinous coatings, for example, show no deterioration after more than four years of outdoor weathering severe enough to cause serious rusting of metals protected only by conventional aluminum coatings. Silicone enamels do not yellow, chalk or check. Weather resistance, characteristic of all Dow Corning silicone products, is a result of their exceptional resistance to oxidation, ultra-violet rays and extreme temperatures.

Another major advantage of silicones as a polish ingredient is their anti-social behavior. Almost nothing adheres to a silicone surface. This release characteristic has already been capitalized upon in many industrial applications. Silicone fluids, greases and emulsions are used widely throughout the rubber industry to prevent tires and other molded parts from sticking to the molds. Silicones applied to paper actually repel water and prevent the adherence of scotch tape, asphalt and uncured rubber stock.

A silicone coating known as "DC Pan Glaze" is used by bakeries in all parts of the world as a substitute for pan grease. A single application of this coating keeps bread from sticking to the pans for hundreds of bakings.

It is making a substantial contribution to cleanliness as well as to more efficient operation in bakeries. This release characteristic keeps road scum, bugs and dirt from sticking to silicone car polish.

Silicones Clean and Polish

THE cleaning and polishing action of silicones has been well established by the performance of silicone-treated tissues introduced almost three years ago by Dow Corning. Known as "Sight Savers," these tissues gained almost immediate acceptance and national distribution in drug stores doing over 90% of the total drug business. They are gaining an international market through effective distribution in Canada, Switzerland, Italy and the Philippines. A running mate for "Sight Savers" is "Cornelia Cloth," a lintless, silicone-treated dustcloth being developed for domestic cleaning and polishing of woodwork, furniture, glassware and mirrors.

Easy application of these products and of silicone car polish is the result of a natural affinity which silicones have for glass and metal surfaces. The polish spreads rapidly over the car and stays put because it does not evaporate and because it won't melt and become soft or freeze and become brittle.

Silicones have other important characteristics, including excellent dielectric properties and resistance to chemicals and hot oils, which have no connection with car polish. One other characteristic, however, is of interest to the soap industry. That is the foam-killing ability inherent in various silicone fluids and compounds. This characteristic is most apparent in one product, "DC Antifoam A." Effective in concentrations as low as one part in a million, "Antifoam A" is finding

wide acceptance in the manufacture and processing of detergents, dry cleaners, water softeners, wetting agents and shampoos, and in refining oils for soap.

The advantages of silicone polishes have already been thoroughly demonstrated on the West Coast, where they successfully resisted desert heat, salt spray, traffic fumes and road scum. Now several major manufacturers have invaded the national market, along with a host of smaller producers, all advertising an amazingly durable luster and a "wipe on, wipe off" technique. Application of silicone polish is almost too simple to be true. Most formulations contain an abrasive for extra cleaning action. It is the presence of this abrasive which makes the "wipe off" necessary after the initial "wipe on." Once the surface has been wiped clean, however, further rubbing, polishing or buffing is unnecessary. In fact, such exercise is almost useless. The silicones practically spread themselves over a metal surface. The one important factor is that the car be as clean as possible before the silicone polish is applied.

Actually, the advantages of silicone polish show up best after a treated car has been in the rain, dust or mud. Simply flushing off caked dirt and polishing the surface with a light cloth restores the original sparkle and gleam in a matter of minutes.

If industrial performance of silicones or experience with these new polishes on the West Coast is any indication, chances are that hundreds of thousands of car owners will get silicone coatings for their cars this season—and chances are that they will find them most satisfactory.

— ♦ —

Tetrachloroethyl ethers of either substituted or unsubstituted phenols are useful as contact insecticides, stomach poisons, or fumigants. Tetrachloroethyl ether of parachlorophenol was the most effective of the compounds tested against flies and a number of other insects. Ciba Ltd. Swiss Patent No. 255,640; through *Chem. Abs.*

AEROSOLS

A two part study of stability tests of low pressure formulations and solubility of various old and new insecticides in propellents and auxiliary solvents.

By R. C. Downing*

Kinetic Chemicals, Inc.

Part I. Stability

SINCE the development of insecticidal aerosols by Goodhue (1) a considerable body of information on this subject has appeared in the literature and has been used to

advantage by the aerosol industry. The work reported here includes stability tests of low-pressure formulations and the solubility of various old and new insecticides in propellents and auxiliary solvents. The term stable is used here to mean little or no decomposition or

discoloration of the liquid and low corrosion of the metal test pieces used in tests.

Part I. Stability

THE propellant in low-pressure insecticide aerosol formulations is usually a combination of a low-boiling liquefied gas and a higher boiling component. A number of combinations has been studied by Fulton (2) with regard to solubility, pressure and spraying characteristics and several satisfactory mixtures were found. Among the more effective combinations reported were (1) a solution of "Freon-12" and "Freon-11" fluorinated hydrocarbons, and (2) a solution of "Freon-12" and methylene chloride. These two commonly used low-pressure propellents have been the subject of further study in this laboratory, particularly from

* Before 36th Mid-Year Meeting, C.S.M.A., Chicago, June 12, 1950.

TABLE I
Comparison of "Freon-11" and Methylene Chloride
in Aerosol Insecticide Formulas

Higher Boiling Component	Per cent	Days of Heating	Corrosion In. Pen./Mo. X 10 ⁶	Condition of Strip	Condition of Glass	Condition of Liquid
Steel—250°F.						
"Freon-11"	34	26	33	Lt. gray discoloration	Heavy black coat	Yellow
"Freon-11"	34	26	28	Lt. gray discoloration	Heavy black coat	Yellow
"Freon-11"	59	26	31	Lt. gray discoloration	Heavy black coat	Amber
"Freon-11"	59	26	36	Lt. gray discoloration	Heavy black coat	Amber
CH ₂ Cl ₂	39	8	135	Lt. tan	Heavy black coat	Black
CH ₂ Cl ₂	39	8	139	Dark gray	Heavy black coat	Black
CH ₂ Cl ₂	68	8	280	Dull gray	Heavy black coat	Black
CH ₂ Cl ₂	68	8	795	Dull gray	Heavy black coat	Black
Tin Plate—250°F.						
"Freon-11"	34	26	51	Med. discoloration	Heavy black coat	Clear amber
"Freon-11"	34	26	68	Med. discoloration	Heavy black coat	Clear amber
"Freon-11"	59	26	52	Very good	Heavy black coat	Clear amber
"Freon-11"	59	26	46	Good	Heavy black coat	Lt. green-yellow
CH ₂ Cl ₂	39	8	121	Lt. discoloration	Heavy black coat	Black
CH ₂ Cl ₂	39	8	193	Med. gray	Heavy black coat	Black
CH ₂ Cl ₂	68	8	376	Lt. discoloration	Heavy black coat	Black
CH ₂ Cl ₂	68	8	364	Dull gray	Heavy black coat	Black
Steel—150°F.						
"Freon-11"	34	268	1.5	Fair	Black coating	Lt. Yellow
"Freon-11"	34	268	0.4	Poor	Black coating	Lt. Yellow
"Freon-11"	59	268	7.1	Poor	Black coating	Lt. Yellow
"Freon-11"	59	268	0.05	Poor	Black coating	Lt. Yellow
CH ₂ Cl ₂	39	268	3.2	Poor	Black coating	Black
CH ₂ Cl ₂	39	268	3.5	Poor	Black coating	Black
CH ₂ Cl ₂	68	268	6.5	Good	Black coating	Black
Tin Plate—150°F.						
"Freon-11"	34	268	0.3	Poor	Black coating	Black
"Freon-11"	34	268	2.9	Poor	Black coating	Cl. Yellow
"Freon-11"	59	268	3.9	Poor	Black coating	Cl. Amber
CH ₂ Cl ₂	39	268	3.7	Poor	Black coating	Black
CH ₂ Cl ₂	39	268	3.9	Poor	Black coating	Black
CH ₂ Cl ₂	68	268	6.9	Good	Black coating	Black
CH ₂ Cl ₂	68	268	6.9	Good	Black coating	Black

the standpoint of corrosion and stability. The importance of stability in storage of an aerosol formulation is well recognized and has been clearly summarized by Hazen and Goodhue (3).

The work reported here in Table I was carried out in the standard stability test tubes described by Young (4) and based on the procedure of Goodhue and Ballinger (5). In brief, it consists of visual observation of the aerosol solution and calculation of the corrosion rate for an exposed metal test piece that has been sealed in a glass tube and stored at 150° F. or at 250° F. The higher temperature was used to accelerate the decomposition and corrosion effects and so obtain a faster comparison of the various formulations. That the high temperature conditions merely intensify the decomposition is indicated by the data which show the same general trends at 250° F. and 150° F. Results of tests of this type on aerosol products have in the past agreed with field experience. The test temperature of 150° F. is but little higher than that possible in actual use.

In these tests steel and tin plate test pieces were used. The tin plate strips were cut from the standard low-pressure can made by the Continental Can Company.

A typical insecticidal formula was made up containing 3% pyrethrum extract (20% pyrethrins in oil), 2% DDT and 95% propellant using "Freon-12" and either "Freon-11" or methylene chloride in the concentration shown in Table II. Ordinary commercial materials were used throughout. This formula is essentially anhydrous and conclusions based on tests using it may not apply to aqueous systems. Further information on this subject will be available soon. The tubes were inspected at frequent intervals for the formation of color, deposits on the glass and appearance of the strip. Visual observations are of considerable value since they indicate decomposition or interaction of the ingredients which in severe cases might cause the aerosol container to become inoperative. A numerical value for corrosion of the metal was obtained at

the end of the test period by the procedure outlined previously (4). The data in Table I describe conditions at the end of the tests and a study of these results indicate the following conclusions:

1. In all tests decomposition of the liquid was much more extensive with methylene chloride than with "Freon-11."

2. Metal corrosion was more rapid in formulations containing methylene chloride although in some cases the difference was not great.

3. Formulas containing 68% CH_2Cl_2 caused somewhat greater corrosion than formulas with 39% CH_2Cl_2 .

4. There was no appreciable difference in the corrosion by formulas containing either 59% or 34% "Freon-11."

5. At 150° F. corrosion of the metal is probably less than at 250° F. although no strict comparison can be made since the periods of treatment are different. Change in the appearance of the liquid seems independent of the temperature or concentration of "Freon-11" or methylene chloride.

6.: There is very little difference in the corrosion of steel or tin plate although steel seems to be slightly better.

In general, formulations containing methylene chloride are more corrosive toward both steel and tin plate than formulas with "Freon-11" and decomposition or interaction of the organic material is more severe and occurs at an earlier period.

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Part II. Insecticide Solubility

THE present trend toward more widespread use of methoxychlor in insecticide aerosol formulations has led to a need for more detailed study of the solubility of this material in the common low-pressure propellants. This study has been completed for "Freon-12" and "Freon-11" fluorinated hydrocarbons, for methylene chloride and for their binary mixtures. The temperature range from -4° F. to about 90° F. has been covered.

The determinations involving liquefied gases were made in a glass bomb constructed from a section of one inch "Pyrex" brand glass pipe about six inches long—sealed at one end and fitted with a steel flange and bolted cover at the other end. The solubility was measured either by observing the solution temperature for a given amount of solid or by filtering a saturated solution from the bomb into a trap, evaporating the solvent and weighing the residue. The solution was agitated by a magnetically driven stirrer. A comparison of the infrared absorption of the residue with that of the starting methoxychlor showed that the two were identical and that there had been little, if any, preferential extraction of impurities by the solvent. The result from the filtration method was usually checked by determining the solution temperature of a given

TABLE II
Solubility of DDT in Chlorofluorohydrocarbons

Solvent	Solubility of DDT, g./100 g. of Solvent	Tem- pera- ture, °F.
"Freon-C316"	$\text{C}_2\text{Cl}_2\text{F}_6$	77
"Freon-12"	CCl_2F_2	77
"Freon-22"	CHClF_2	70
"Freon-113"	$\text{CCl}_2\text{FCClF}_2$	73
"Freon-112"	$\text{CCl}_2\text{FCCl}_2\text{F}$	77
"Freon-11"	CCl_3F	77
"Freon-21"	CHCl_2F	61
	CCl_4	77
	CH_2Cl_2	66 (1) 81-86

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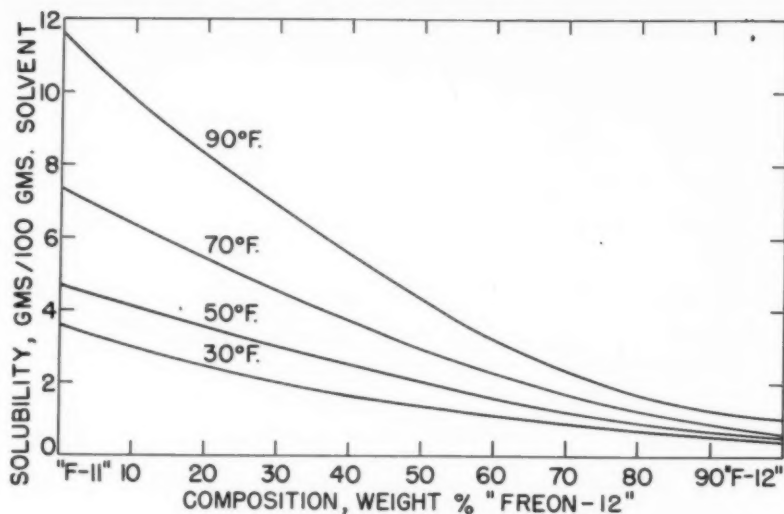


FIGURE 1

SOLUBILITY OF DDT IN "FREON-11" - "FREON-12" SOLUTIONS

amount of insecticide in the prescribed amount of solvent.

In order to compare the solubility of methoxychlor with the more commonly used DDT, data for the latter in "Freon-12" and "Freon-11" are shown in Figure 1. In a composition containing 50% by weight of "Freon-12" and 50% "Freon-11", the solubility of DDT at 90° F. is 4.3 g./100 g. of solvent and at 30° F. about 1.4 g./100 g. In Figure 2 similar curves for methoxychlor show that in the 50% "Freon-12" mixture the solubility at 90° F. is nearly 5.2

g./100 g. of solvent; at 30° F. it is about 1.5 g. and at 0° F. about 1 g./100 g. The solubility of methoxychlor and of DDT is about the same in "Freon-12" but the methoxychlor is appreciably more soluble in "Freon-11" and somewhat more so in mixtures of the two. Since methoxychlor is in general more soluble than DDT there should be no difficulty in formulating it with the propellents now used satisfactorily with DDT. In all of this work recrystallized methoxychlor with a melting range of 185-188.6° F. was used. These solubility

data were assembled from measurements in the pure solvents at -4° F., at 32° F., and at 68° F. and in a mixture containing 54% "Freon-12" and 46% "Freon-11" by weight at the same temperature. From these measurements the curves shown in Figure 3 were drawn and then the data were plotted on a composition basis as in Figures 1 and 2.

As might be expected, the solubility of methoxychlor in methylene chloride and in mixtures of methylene chloride and "Freon-12" is quite high. A series of curves in which the solubility is plotted against the composition at different temperature levels from 0° F. to 70° F. is given in Figure 4. In a solution containing 50% "Freon-12" by weight the solubility ranges from about 21 g./100 g. of solvent at 0° F. to 77 g. at 70° F.

The solubility of DDT has been determined for a large number of organic solvents since it became widely used in aerosol formulations. Jones, Fluno and McCullough (1) have reported the solubility in many higher boiling liquids of potential value as auxiliary solvents and, as might be expected, found considerable variation in the degree of solubility. The work reported here includes the solubility of DDT in some liquefied gases and shows the effect of temperature and the effect

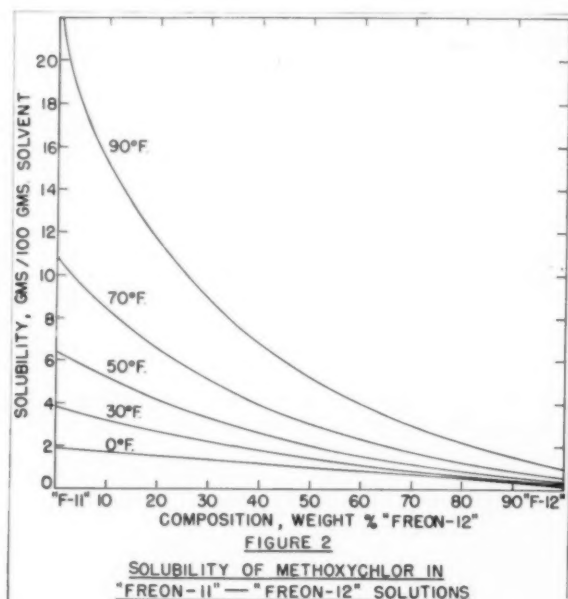


FIGURE 2

SOLUBILITY OF METHOXYCHLOR IN "FREON-11" - "FREON-12" SOLUTIONS

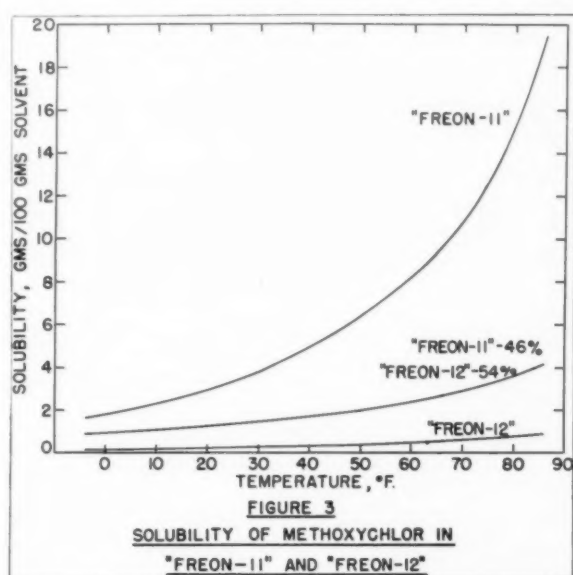


FIGURE 3

SOLUBILITY OF METHOXYCHLOR IN "FREON-11" AND "FREON-12"

A black and white photograph of a coastal landscape. In the foreground, a large, dark pine tree stands on the right side. The background shows a rocky shoreline with more pine trees and a body of water under a clear sky.

Pinette

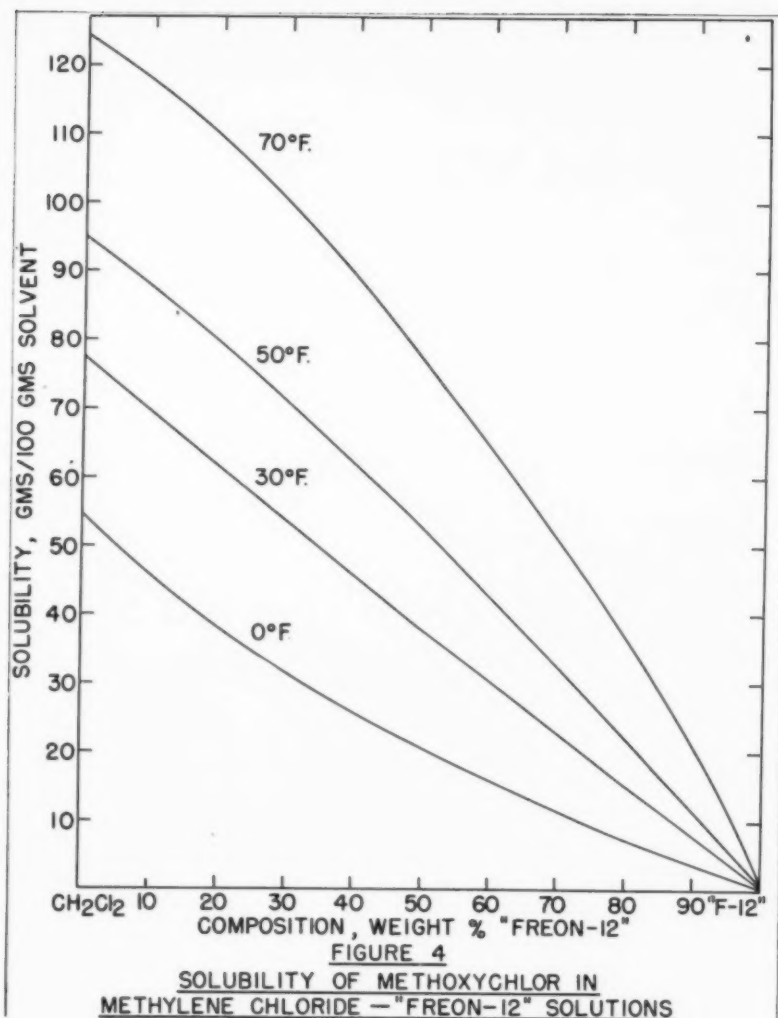
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of fluorine in the solvent molecule.

In Table II the solubility of DDT in various chlorofluoromethanes and -ethanes is listed together with the formula of the solvent. It can be seen that the solubility decreases as the fluorine content of the molecule increases and reaches a very low figure for highly fluorinated materials. The substitution of hydrogen for chlorine caused a considerable increase in the solvent power when one fluorine atom was present in the methane molecule and only a slight increase when two fluorine atoms were present.

The solubility of DDT and methoxychlor in a commercially available alkylated naphthalene solvent used in insecticide aerosol formulations covering the temperature range from -13°F . to 77°F . is shown in Table III. As expected, the solubility de-

TABLE III
Solubility of DDT and Methoxychlor in Sovacide 544-C

Temperature, $^{\circ}\text{F}$.	Solubility, g./100 g. of Solvent	
	DDT	Methoxychlor
77	53	50
39	34	21
14	2.3	3.4
-13	1.4	1.0

TABLE IV
Comparison of Methylene Chloride and "Freon-11" as Solvents

	Solubility of Insecticide, g./100 g. of Solvent	
	Temp., $^{\circ}\text{F}$.	Methylene Chloride "Freon-11"
DDT	86	66 10
Methoxychlor ¹	68 86	120 20
Lethane ²	32	Misc. Misc.
Chlordane ³	32	Misc. Misc.

¹ 1,1,1-Trichloro-2,2-bis (p-methoxyphenyl) ethane recrystallized from alcohol, m.p. $185-188.6^{\circ}\text{F}$.

² β -Butoxy- β -L-thiocyanodiethyl ether (50%), petroleum distillate (50%).

³ 1,2,4,5,6,7,8,8-Octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindan.

creases rapidly with decreasing temperature until at -13°F . the value is about 1%. In this solvent DDT and methoxychlor have about the same solubility, whereas in methylene chloride and "Freon-11" (Table IV) the solubility of methoxychlor is about double that of DDT.

A comparison of methylene chloride and "Freon-11" as solvents for some of the common insecticides is given in Table IV, including DDT, methoxychlor, lethane and chlordane. The latter two have recently been approved by the Department of Agriculture for use in aerosols. "Lethane" is also miscible with "Freon-12" at 32°F . while chlordane has a solubility in "Freon-12" of 30% by weight at 72°F . In all cases the solubility in "Freon-11" and in methylene chloride is more than adequate for the formulation of insecticidal aerosol sprays. In general the solubility in methylene chloride is greater than that in "Freon-11."

Summary:

THE solubility of methoxychlor in "Freon-12," "Freon-11" and methylene chloride and in their binary mixtures has been measured and compared with the data for DDT in "Freon-12" and "Freon-11." In general, methoxychlor is more soluble than DDT, especially in "Freon-11" and methylene chloride. The solubility in all of the mixtures is more than adequate for the preparation of satisfactory aerosol formulations.

Data on the solubility of DDT in several chlorofluoro compounds show that the solubility decreases as the fluorine content of the molecule increases.

(Turn to Page 139)

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Insecticide-Resistant Flies

FAILURES of DDT residual sprays in controlling house flies (*Musca domestica* L.) in southern California were first observed in the spring of 1948. Laboratory and field studies were undertaken at that time to determine the causes and to find remedial measures for these failures.

DDT-Resistance

INITIAL studies (March and Metcalf, 1949a,) showed that the primary cause for the ineffectiveness of DDT residual sprays was the development of house fly resistance to DDT. Samples of natural fly populations were collected in the field, and the susceptibilities of their laboratory reared progeny to various insecticides were compared with those of a known non-resistant laboratory strain of flies. In these tests, twenty-four hour LD_{50} 's in micrograms per female fly were determined by the topical application of insecticides in acetone solution by means of a micro-syringe, and then compared for the various fly strains (see Table I).

The most DDT-resistant field strain collected (Bellflower strain) is more than 300 times as resistant to DDT as the nonresistant laboratory strain. This resistance is not entirely specific for DDT, but exists as well, though to a lesser degree, for structurally similar compounds. The Bellflower strain shows no resistance, or at the most a resistance of low order, to certain other insecticides including lindane, heptachlor, aldrin dieldrin, toxaphene, parathion, pyrethrins and allethrin.

A number of insecticides including methoxychlor, toxaphene, chlordane and benzene hexachloride were investigated as replacements for DDT in the field. The most effective

Continuing studies of resistant houseflies in Southern California emphasize seriousness of the problem . . . resistance develops to substitute toxicants also . . . work continuing to develop a synergist that may aid effectiveness of DDT against resistant strains . . . supplementary control measures suggested.

of the commercially available insecticides has been benzene hexachloride used at the rate of 17-20 pounds of the 10-12 per cent gamma-isomer wettable powder, or 8 pounds of the 25 per cent lindane wettable powder per 100 gallons of finished spray. Residual deposits from thorough application of these formulations to the point of run-off have provided satisfactory fly control in southern California for about 4 weeks during the hottest summer

weather, and 8 weeks during the cooler spring and fall weather.

Because of its high toxicity and long residual activity, equally effective control was obtained with 4-8 pounds of the 25 per cent dieldrin wettable powder per 100 gallons, however, this material is still available only on an experimental basis for fly control.

In August, 1949 information was received that benzene hexachloride was not accomplishing satisfactory fly

TABLE I
Measured drop tests showing comparative 24-hour topical LD_{50} 's in micrograms per female fly for laboratory, Bellflower and Pollard strains.

Compound	24-hour LD_{50} 's in micrograms per female fly for following fly strains:		
	Laboratory	Bellflower	Pollard
DDT	0.033	11	>100
DFDT	0.10	4.0	1.2
DTDT ¹	0.16	0.70	2.7
DeLT ²	0.11	1.3	2.7
Methoxychlor	0.068	0.96	1.4
DDD	0.13	60	>100
Lindane	0.010	0.080	0.25
Heptachlor ³	0.032	0.060	1.5
Aldrin	0.044	0.076	0.78
Dieldrin	0.031	0.050	0.86
Toxaphene	0.22	0.62	3.4
Parathion	0.015	0.020	0.023
Pyrethrins	1.0	0.94	1.6
Allethrin ⁴	0.43	0.97	0.50

¹ 2,2-bis(p-tolyD)-1,1,1-trichloroethane.

² 2,2-bis(p-ethylphenyl)-1,1,1-trichloroethane.

³ The most toxic ingredient of technical chlordane.

⁴ Allyl analog of Cimerin I.

By Ralph B. March and Robert L. Metcalf

University of California Citrus Experiment Station,
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¹ Before Chemical Specialties Manufacturers Assn., Chicago, June 12, 1950. The authors wish to acknowledge the assistance of Lawrence L. Lewallen and Miss Bernice McGill in conducting these studies.

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TABLE 2
Measured drop tests showing comparative 24-hour topical LD₅₀'s and LD₉₅'s in micrograms per female fly for laboratory, Bellflower and Pollard strains.

Compound	24-hour LD ₅₀ 's and LD ₉₅ 's in micrograms per female fly for following fly strains		
	Laboratory	Bellflower	Pollard
DDT			
LD ₅₀	0.033	11	>100 ¹
LD ₉₅	0.060	>100	>100
Lindane			
LD ₅₀	0.010	0.080	0.25
LD ₉₅	0.040	0.37	1.3
Dieldrin			
LD ₅₀	0.031	0.050	0.86
LD ₉₅	0.060	0.11	6.5
Parathion			
LD ₅₀	0.015	0.020	0.023
LD ₉₅	0.020	0.041	0.037

¹ This is the maximum amount of DDT which can conveniently be applied by topical application of 1 cubic millimeter of acetone solution containing 10 per cent DDT. More concentrated solutions cause plugging of the needle due to deposits of solid DDT.

control at the Pollard and Sons Poultry Ranch, Santa Ana, California (March and Metcalf, 1949b). This ranch had been treated in March, 1949 with 40 pounds of 50 per cent DDT wettable powder per 100 gallons with unsatisfactory control. This result was to be expected in light of the widespread occurrence of DDT-resistant flies in southern California. In April an application of 17 pounds of the 12 per cent gamma-isomer benzene hexachloride wettable powder per 100 gallons gave satisfactory control for about 4 weeks, but a third application in July gave control for only about 5 days. Applications of 50 pounds of the 12 per cent gamma-isomer benzene hexachloride wettable powder and 8 pounds of the 25 per cent dieldrin wettable powder were not any more effective.

A sample population of flies (Pollard strain) was collected and the relative degrees of resistance of the laboratory reared progeny to various insecticides were determined in the same manner as had been done for DDT-resistant flies. These tests showed (see Table I) that the Pollard strain is even more resistant to DDT than the Bellflower strain, and similarly it is resistant to compounds structurally related to DDT. In contrast to the Bellflower strain, it shows considerable resistance to other chlorinated hydrocarbons such as lindane, heptachlor, aldrin, dieldrin and toxaphene. The Pollard,

Bellflower and laboratory strains all show approximately the same level of susceptibility to parathion, pyrethrins and allethrin.

Outlook

THUS, there are now two types of resistant fly strains in the field in southern California. The Bellflower type is resistant only to DDT and related compounds, and the Pollard type is resistant to other chlorinated hydrocarbons such as lindane and dieldrin, as well as DDT and related compounds. Neither strain is resistant to parathion, pyrethrins or allethrin.

Although resistance of the Pollard type had appeared only on a limited scale in the late summer of 1949, a considerable number of reports of such resistance have now reached us. We have been able to verify three of these reports from widely separated areas. One example is that of a strain of house flies received from the U. S. Public Health Service Fly Control Project in Phoenix, Arizona. Limited tests with this strain have shown that it is as resistant as the Pollard strain to DDT and even more resistant to lindane and dieldrin. It would appear that there will be progressive and widespread development of this type of resistance throughout southern California during this next fly season.

The above levels of resistance

are even more striking if one compares the LD₉₅'s, which more closely approximate the desired level of field control, instead of the LD₅₀'s (see Table II). On this basis, for example, the Bellflower strain is more than 1500 times as resistant to DDT as the laboratory strain in contrast to a value of 300 times for the LD₅₀'s.

These results point out the great range of individual susceptibility in the field collected resistant strains. Tests with the Pollard strain have shown that although the LD₅₀ for dieldrin is 0.86 microgram per female fly, 1 fly out of approximately 200 is able to survive 100 micrograms of dieldrin. It has been possible to develop super-strains in the laboratory by selection, with further insecticidal treatment, of the most resistant individuals from the field collected strains. A super-Bellflower strain is more than 3000 times as resistant to DDT as the laboratory strain, and a super-Pollard strain is approximately 10,000 times as resistant to lindane as the laboratory strain and more than 3000 times to dieldrin. Continued selection in the field may be expected to produce widespread levels of resistance such as this, which is in fact already the case with the resistance of the Pollard strain to DDT.

It is apparent that the degrees of resistance shown by the Bellflower strain to DDT and by the Pollard strain to DDT, lindane and dieldrin, are sufficient to make it impracticable to use these materials for residual house fly control where such strains are present. The development of resistance by a single strain of house flies to a number of chemically unrelated insecticides poses a most serious problem for the continuation of house fly control by the residual application of insecticides and presages the further development of resistance to other insecticides which may be substituted for those against which resistance has developed.

The Bellflower strain was reared in the laboratory for over 35 generations without exposure to DDT and without appreciable change in the re-

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TABLE 3

Measured drop tests showing comparative 24-hour topical LD₅₀'s in micrograms per female fly for 1948, 1949 and 1950 field collections of the Bellflower strain.

Compound	24-hour LD ₅₀ 's in micrograms per female fly for following collections of Bellflower strain		
	1948	1949	1950
DDT	11	10	>100
Lindane	0.080	0.048	1.0

sistance of the progeny. Our most recent resistance tests with the Bellflower strain, however, have shown a trend toward an increase in the number of highly resistant individuals. A considerable number of tests on further generations will be necessary to confirm and clarify this trend. At the present time its importance must be minimized since there was no decrease in the resistance of the most resistant individuals in the strain.

In the field, the picture is more complicated because there is continuous selection pressure by insecticides in current use. This is shown by the results of the subsequent sampling and testing of the field population at the location where the Bellflower strain was collected (see Table III). In 1949 there was no appreciable change in the resistance of the strain in the field, but in 1950, following the use of benzene hexachloride since August, 1948, not only had the resistance to lindane increased approximately 12 times, but the resistance to DDT had increased more than 10 times, though DDT had not been used. This increase in resistance to DDT emphasizes the improbability of any rapid decrease in resistance in the field after an insecticide is no longer used.

Basis of Resistance

THE fundamental basis of this resistance has been a subject of considerable interest. Studies (March and Lewallen, 1950) have shown that there is no statistical difference in the general vigor of the Bellflower and laboratory strains as evidenced by length of life cycle, average weight of individual flies and susceptibility to immobilization by heat and cold. No differences were found in the gross morphology of the two strains. Differ-

ences in the dimensions of the tarsal segments were not uniform enough or large enough to indicate that they contribute to the resistance. Measurements of the cuticular thickness of the tarsi and the thorax were of the same magnitude. Injections of DDT directly into the flies showed the same relative degree of resistance as external applications, thus demonstrating that the resistance is not caused by the failure of DDT to penetrate the fly cuticle.

Since rabbits have been shown to metabolize DDT (White and Sweeney, 1945) through DDE [2,2-bis(*p*-chlorophenyl)-1,1-dichloroethylene] to DDA [bis(*p*-chlorophenyl)acetic acid], both of which are relatively nontoxic to insects, and the large milkweed bug has been shown to metabolize DDT rapidly (Ferguson and Kearns, 1949) to unknown metabolites, it was proposed that DDT-resistant house flies might have developed an increased ability to detoxify DDT by this metabolic mechanism. Studies, which are still in progress, show that DDT-resistant flies (super-Bellflower strain) are able to metabolize larger quantities of DDT at a greater rate than nonresistant flies (laboratory strain). Although the metabolic end products have not been completely defined, there is evidence that the degradation process proceeds

principally to DDE, but there is no evidence of the formation of DDA. It is apparent that the increased ability of DDT-resistant flies to metabolize DDT contributes considerably to their resistance. The extent of this contribution in relation to possible changes in the competing mode of action system is not known, however, and is of considerable importance as significant amounts of DDT in relation to the LD₅₀ dose for non-resistant flies remain in living DDT-resistant flies 72 hours following injection.

Support for this detoxification theory of DDT-resistance may be found in the results of laboratory toxicity tests with 1,1-bis(*p*-chlorophenyl)-2-nitropropane² and 1,1-bis(*p*-chlorophenyl)-2-nitrobutane³ (see table IV). These compounds, although structurally related to DDT, obviously cannot be detoxified by the same dehydrohalogenation mechanism. Thus, the fact that laboratory, Bellflower and Pollard strains all show the same degree of susceptibility to these compounds, may indicate the importance of the detoxification mechanism in DDT-resistance. Preliminary field studies with these compounds have shown promise in the control of DDT-resistant flies.

Further toxicological, physiological and genetic studies are in progress to characterize the nature of fly resistance to insecticidal action more completely. These include the development of resistance by flies to various insecticides in the laboratory, by topical applications to the adults, and by

² Commercial Solvents Corp. CS645A.

³ Commercial Solvents Corp. CS674A. A mixture of 2 parts of CS674A and 1 part CS645A is marketed as Dilan.

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TABLE 4

Measured drop tests showing comparative 24-hour topical LD₅₀'s in micrograms per female fly for laboratory, Bellflower and Pollard strains

Compound	24-hour LD ₅₀ 's in micrograms per female fly for following fly strains		
	Laboratory	Bellflower	Pollard
1,1-bis(<i>p</i> -chlorophenyl)-2-nitropropane	0.095	0.15	0.11
1,1-bis(<i>p</i> -chlorophenyl)-2-nitrobutane	0.15	0.18	0.11
DDT	0.033	11	>100

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CSMA Meeting

(From Page 110)

soap kettle?

Ans. No reason why it should be any more expensive to buy a blend. It would be advantageous to buy individual oils. There would be a slight charge on small orders for a blend, but not on large orders. It would seem to be better to have individual fatty acids and blend them to one's needs. Another factor would be the number of blends desired. It is harder to make up specifications for blends than for individual acids.

Q. Why do fatty acids as supplied have titres so much higher than the oil or acidulated soap stock from which they are derived?

Ans. Because distillation removes saturated constituents to a greater extent than the unsaturated components.

Q. Why is there a difference in odor, color and viscosity from lot to lot, when all are produced basically from the same raw materials?

Ans. There is an error in the premise that the oil is the same. Oils from different sections of the country vary. The fatty acids are more uniform than the materials from which they are made. The variations in properties from lot to lot may be attributed to the material with which the producer is working. The variations in raw materials can be largely overcome with good selection of material and fractionation operation. In this way

certain specifications can be made such as color, iodine value, titre, etc.

Q. Can stearic and palmitic or long chain saturated fatty acids be removed from fatty acid compositions? Economically?

Ans. Palmitic can be removed by fractional distillation. Cotton seed and soyabean fatty acids can be altered considerably in that most of the palmitic can be removed. Stearic acid cannot be removed. It comes over with C-18 fractionations. Degree of separation by fractional distillation is slight. It is possible to remove palmitic and stearic from mixtures. It is difficult to remove them completely but it can be done by fractionate crystallization, although not economically. With some of the solubility distillation processes now being employed, down to four per cent can be removed economically.

Q. When saturated acids are removed, can the fatty acid be priced to compete with the corresponding natural oil?

Ans. It depends upon whether one is working from soap stock or whole oils. Acids from the whole oil are going to cost more. Market conditions are a factor here, too.

Q. To how close a tolerance can the different components of a given fatty acid be held, and how will it affect the price?

By fractional distillations to within five per cent. Components of palmitic acid can be held within five per cent, and stearic the same.

Q. Why in some shipments does moisture content of fatty acids run high, up to three per cent—can this be controlled by producer?

Ans. Yes. The amount of moisture in different fatty acids on leaving the plant does not run over from one-half to one per cent.

Carnauba Outlook

THE Waxes and Floor Division meeting on June 12 heard A. J. Bohart, president of the American Wax Importers & Refiners Association, New York, state that there has been little change in quantity of carnauba produced in the past and none appears to be in sight in the future. He gave as the basic reasons why production remains at about the same level the limited area where trees will produce wax and the regulation by government authorities of the cutting of leaves. Supplies in Brazil have shrunk this year, the speaker said, having been reduced by about 2,000 tons, leaving approximately 500 tons in stock. He added that Brazil will come to the end of the present season in much better statistical position on Carnauba than at any time for some years since the combined interior and port stocks then, will be much smaller than for some years. Harvest of the 1949-50 crop is about complete now, and new crop arrivals at shipping ports cannot



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C-9 is:

Specific Gravity 20/4°C.	0.949
Hydroxyl No.	255
APHA Color	100
Refractive Index (20°C.)	1.5140
Flash Point (TOC°F.)	300
ASTM°C.	
IBP	290.0
5 ml.	293.0
50 ml.	295.0
95 ml.	296.5
E.P.	298.0

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Compressor piping frames this picture of a Jefferson ethylene unit (purification section) at Port Neches, Texas.



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be expected before the end of November.

Although he did not predict the future trend of carnauba prices, Mr. Bohart told of efforts in the past to influence prices. The loan and price fixing programs in Brazil resulted primarily from efforts of the Brazilian authorities to better the economic position of the northern provinces where carnauba is produced, an area where essential public works have been delayed for decades by lack of public funds. The idea has not died out, and both programs are in effect, without any indication of a change.

Recent developments in the production of crude cane wax were described in the next paper, "Sugar Cane Waxes" by E. S. McCloud of S. C. Johnson & Son, Racine, Wis. The future importance of this by-product of the cane sugar industry was shown in discussing its production potential, its chemistry and its relative advantages in comparison with other crude waxes. The value of the material lies in the hard natural wax derivatives which may be produced from it and which may relieve the critical demand on current supplies of hard vegetable waxes. The refining of crude cane wax was described and the value of the wax and other fractions were discussed in terms of finished product application.

Manufacturing processes, physical properties and crystal structure of both paraffin and microcrystalline wax were described in a paper entitled, "Paraffin and Microcrystalline Waxes Today," by Donald Jones of Atlantic Refining Co., Philadelphia. A motion picture on crystal structure, paraffin and mal crystalline type waxes was also shown, as was a chart giving the physical properties pertinent in choosing a petroleum type wax for use in the liquid type polishes.

A joint session of the Aerosol and Insecticide Divisions was the opening feature of the June 13 session. In addition to papers: "Basic Information on Low Pressure Aerosol Nozzle Design" by R. A. Fulton and A. H. Yeomans, Insecticide Investigations, Bureau of Entomology and Plant Quarantine, U.S.D.A. and "Allethrin in Aerosols" by Herman Schroeder of U. S.

Industrial Chemicals, Inc., Baltimore, a symposium on allethrin was presented. Dr. Alfred Weed of John Powell & Co., New York, was moderator. Among those participating were R. W. McNamee of Carbide & Carbon Chemicals Division, New York, who discussed "General Nature of Allethrin"; J. B. Moore of McLaughlin Gormley

Complete Meeting Report

A report of the complete proceedings of the 36th mid-year meeting of the Chemical Specialties Manufacturers Association will be published in the near future as a special supplement to SOAP & SANITARY CHEMICALS by Mac Nair-Dorland Co. The report will carry all of the papers presented at the meeting.

King Co., Minneapolis, with a paper entitled "Standardization, Analysis and Storage of Allethrin"; Donald F. Starr of S. B. Penick & Co., New York, who spoke on "Toxicity of Allethrin with Particular Reference to Rats"; Kenneth B. Nash of John Powell & Co., New York, reporting on "Biological Tests of Allethrin Without a Synergist"; and Howard A. Jones of U. S. Industrial Chemicals, Inc., Baltimore, whose paper was "Biological Tests of Allethrin in Combination with Synergists."

Mr. McNamee pointed out that "one of the principal jobs remaining to be done in connection with the successful commercialization of allethrin is to define it, and as a preliminary step toward doing this we must recognize it as a synthetic organic chemical." He said, "it is not an extract a natural product and does not contain a multiplicity of extraneous and nondescript properties; it is a relatively pure substance. Accordingly, a method of definition should be suggested if we examine the procedures now used for specifying other high-quality, synthetic organic chemicals."

Pertinent facts concerning the physical and chemical properties of allyl cinerin were listed by Mr. McNamee as follows: "(It) is a fairly high-boiling ester with a simple elemental analysis—carbon, hydrogen and oxygen. Its molecular weight is both easy to calculate and easy to determine. Like other synthetic, organic chemicals it can be specified rather closely by

reference to physical characteristics such as solubilities in useful solvents, specific gravity and refractive index. It has the chemical attributes of an ester, a ketone, an alcohol and an unsaturated hydrocarbon. In addition, it has the quality of absorbing certain light frequencies in a unique combination of ways." The speaker further stated, it would seem that if we had pure allyl cinerin in hand, there would be no difficulty in analyzing it. . . . At present, commercial allyl cinerin is not a 100 per cent pure material. A small quantity, perhaps 10 per cent, of other simpler chemicals is contained. These impurities interfere with some of the chemical determinations and tend to vitiate the quantitative results of the analyses. Hence, it is incumbent upon us to do one or both of the following:

"1.) Produce a material containing so little of the impurities that the chemical methods can be applied without regard for the interfering materials. This is not necessarily impractical.

"2.) Characterize the impurities precisely so that they can be determined quantitatively in order to arrive at the proper assay of a sample of allyl cinerin. This we are doing.

"Now, to be more specific about the present commercial allyl cinerin. What is it like and what certain knowledge do we possess concerning its physical and chemical properties? ***It is a clear liquid with a specific gravity of 1.0005 at 20°C. and a refractive index of 1.5040 at 20°C. It is completely miscible with petroleum distillates ordinarily employed in the formulation of insecticidal sprays. The color of the solution is very light. Less than 0.1 per cent of this product is insoluble in the "Freon" used in aerosols. Moreover, it stays that way in storage and does not develop polymers and gums which clog orifices."

In his talk on standardization, analysis and storage of allethrin, Mr. Moore pointed out:

"The currently used methods of analysis for standardization of pyrethrum products can be used in the analysis of allethrin even though we know they are not perfect. At first it would seem that the Seil and mercury reduction methods should give better and more reliable results with allethrin which is supposed to be a pure chemical than with the natural product, which is well known to be composed of four biologically active constituents. ***The Seil method will give values for biologically active material that are slightly too high just by the few per cent of free acid present in allethrin. For this same reason we have suspended working on the method using absorption of iodine, although we had determined already that only the unsaturated linkage in the acid radical and that in the allyl chain of the cinerolone react. The double linkage in the nucleus of the cinerolone, however, does not react with the iodine. It was originally hoped that this method would avoid the long time required by the Seil

(Turn to Page 135)

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36	180/185	8 Max.	8 Max.	30-35	85-95
1035	195/200	2 Max.	2 1/2 Max.	Nil	Nil

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PH 50-4

Many New Products at N.S.S.A. Show

AMONG the exhibitors showing new products at the recent trade show and convention of the National Sanitary Supply Association in Chicago were the following.

Floor Machines

S. C. Johnson & Son, Inc., Racine, Wis., presented a new 12-inch, all purpose floor maintenance machine for home, restaurant, office, small institutions.

Rex Cleanwall Corp., Brazil, Ind., showed a new electric sweeper, the "Kingston," for small floor areas. This company's 1950 line of floor machines shows numerous model changes.

Multi-Clean Products, Inc., St. Paul, Minn., had a new electronic shut-off for its industrial vacuum cleaner. The power is cut if water picked up threatens to flood the mechanism. Also presented was a new, light weight, 12-inch floor machine for small industries.

Lincoln-Schlueter Floor Machinery Co., Chicago, made the first showing here of the "Lincoln Cadet," a new floor or carpet cleaning machine for small business establishments.

Kent Co., Rome, N. Y., introduced two new models of the Kent quiet, triple powered vacuum floor machines; One scrubbing machine now has a tank attached, a new feature. Also shown was a small nine-inch floor machine for scrubbing, waxing and polishing.

General Electric Co., Bridgeport, Conn., presented a new portable, wet or dry pickup, industrial vacuum cleaner for small institutions and industries. Mechanism incorporates a by-pass motor for separate air cooling of motor, also other safety features.

Hild Floor Machine Co., Chicago, had a new model vacuum floor machine, incorporating by-pass air cooled motor device, which allows machine to pick up water without danger of it being drawn into motor. Other Hild offerings were improved scrubbing and polishing machines, rug and carpet shampoo machines.

General Floorcraft, New York, showed a new semi-commercial floor machine with counter-revolving twin brushes, with 16-inch spread, designed for use in stores, offices, schools, hospitals, homes, apartment houses, etc. The machine scrubs, waxes, polishes, buffs, dry cleans and refinishes.

Finnell System, Inc., Elkhart, Ind., made first showing of a new model floor machine, combining a scrubber with vacuum pickup. Also models in different sizes, with improvements of various kinds.

Clarke Sanding Machine Co., Muskegon, Mich., showed for the first time an electric mopper with capacity to pick up 36 inches of water in one move. Also introduced a new buffer-vacuum machine which polishes, then picks up any loose dirt remaining on floor.

Advance Floor Machine Co., Minneapolis, Minn., displayed a new brush-riding "Speed Boy" floor machine, with adjustable handles, automatic device for raising or lowering the wheels, a new quiet drive, without

chain or belt, said to eliminate grease leakage or slipping of a belt.

Sprayers

H. D. Hudson Mfg. Co., Chicago, presented its new line of "nebulizer" sprayers, which give aerosol efficiency with ordinary insecticides. Shown also was the "Eclipse," a new stainless steel continuous sprayer, and various improved models in their compression sprayer line for specific purposes.

Knox Chemical Co., Chicago, made their first public showing of their "Microsol," aerosol glycol fog dispenser, for factory, dairy, warehouse, etc.

The growing interest of sanitation engineers in use of triethylene glycol vapor was also reflected in exhibits of their dispensers by Air Purification Service, Inc., Newark, N. J., and Columbia Chemical Co., Inc., Chicago.

Chemical Products

Federal Varnish Div., Chicago, showed a new "Flexiclor" chlorinated rubber, floor coating material.

M. D. Stetson Co., Boston, Mass., made first showing of "Amigo," a new liquid organic type detergent for mechanical dishwashing in hard or soft water, under automatic dispenser control. Product now announced for national distribution.

Tru-Pine Co., Chicago, has widened the use of aerosol spray bombs to include not only insecticides, but a new plastic spray to apply a protective coating to such things as paintings; also an aluminum enamel spray, for radiators in home, and a moth proofing spray.

Tech Soap Mfg. Co., Chicago, made an initial showing of a new concentrated synthetic detergent for jobbers. Also showed "Wax-o-Lite," soap cleaner, in varied colors, which provides a degree of individuality for dealers handling this product in the same community.

Sugar Beet Products Co., Saginaw, Mich., showed its newly designed line of containers for its regular "SBS" skin cleaners, but bearing the brand name "Beetsol," with space for imprinting distributor's or jobber's name. Also shown was a new cleaner-sanitizer, containing quaternaries, plus compatible synthetic detergents and detergent salts, for cleaning and sanitizing in one operation.

Solvay Sales Div., Allied Chemical & Dye Corp., New York, showed two new products, "Air Dryette, Jr.," for absorbing moisture in air in basement, etc. and "Nytron," a synthetic detergent.

I. Schneid, Inc., Atlanta, Ga., presented deodorant cakes individually wrapped and packaged in a new hermetically sealed steel tube, which lengthens shelf life, without deterioration by evaporation or moisture damage. Idea of steel tube, said to be new in industry.

Pine-O-Pine Co. of Texas, Houston, showed a new type fortified pine oil cleaner-disinfectant-deodorant.

Peck's Products Co., St. Louis, Mo., made first showing of three new products: "Pexene," a floor conditioning compound for

removing dark film and restoring original brightness of any hard floor surface; "Pexsyn L 206," a synthetic detergent; and "Flo-Crown," 80 oil base. Also shown were "Aseptrol" and "Aseptex," containing G 11.

Frank Miller & Sons, Chicago, announced they are now packaging "Floor Sweep," wax base and oil base sweeping compound in 5-lb. packages for use in home basements, garages, etc., sold through hardware stores to home owners, janitors, etc. This is in addition to usual industrial applications.

Kem-Stone Products Co., Chicago, presented "Kem-Stone" briquettes, a new dishwashing detergent in brick form with completely automatic dispenser for maintaining constant strength of compound in dishwashing machine.

Hysan Products Co., Chicago, announced two new specialty products, "Ludene," a disinfectant and deodorizer for bowl cleaning; also "Air-Gly," an aerosol deodorant and disinfectant.

Harley Soap Co., Philadelphia, showed a new product, "Harc-Trol," antiseptic liquid hand soap; also "Carbosolve," carbon remover; "Creas-off," a grease remover, and "Car-Wash," for auto laundries.

Haag Laboratories, Inc., Blue Island, Ill., introduced "S-D," a new synthetic liquid soap floor concentrate. Also announced for jobbers a new specification sheet, with space for imprinting jobber's name.

Boyle-Midway, Inc., New York, showed "Auto-Brite," a new silicone process car cleaner and polisher; A new "Black Flag" bug killer with chlordane base, carrying a double money-back guarantee to kill household crawling insects; "Black Flag" roach spray with chlordane is new as is a new "Old English" electric floor polisher, which scrubs, waxes and polishes.

Fuld Bros., Inc., Baltimore, Md., made first announcement of a new compound for removing accumulated metallic salts or other scum or film from floor surfaces of all types; announced that "Ludox" colloidal silica, a du Pont, slip retardant discovery, will be added to all Fuld waxes on request. Featured also, "Comp," a one-operation cleaner and sanitizer, with disinfectant combined; also "Trol-Dus," a new antiseptic floor dressing.

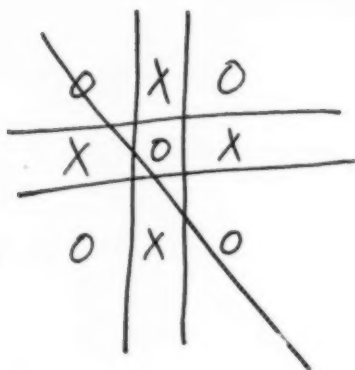
Chase Products Co., Maywood, Ill., showed a new insect bomb; also a new auto and furniture wax, applied by low pressure aerosol dispenser. Also a new chrome aluminum enamel applied by aerosol dispenser.

Baird & McGuire, Inc., Holbrook, Mass., first showing of "S-D," new odorless sanitizer and deodorizing cleaner, for general use in home, office or plant cleaning. Featured "Mint-O-Phene," popular deodorant and disinfecting germicide.

Chemical Service of Baltimore, Baltimore, Md., showed for first time "Glyco-San," non-inflammable air sanitizer and deodorant. Also announced availability soon of a newly developed floor dressing material, "Cerox," using carnaubau, treated by a new process.

Miscellaneous

Acme Sponge & Chamois Co., Chicago, had two newly designed packages to hold two new imported English chamois cloths. Also



a straight line is the shortest (and surest) way to high and steady profits. Why play games with "make believe" safety waxes when you can buy the time tested, age proven, original anti-slip wax, SURE STEP. Once you and your customers have tried it, you'll agree that "It Stands Up—You Stand Up". For additional information, write to:

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new cellophane package for sponges; and announced a new patented dusting and polishing mitt is back on market after wartime absence.

American Sponge & Chamois Co., New York, showed a new all purpose long-wearing, "Duet" cleaning cloth in different sizes, for wall washing, auto washing, scrubbing, etc.

Empire Brush Works, Inc., Port Chester, N. Y., showed new emprene plastic deck scrub brush, new nylon brushes, brushes with new plastic centers and horse hair casings, new plastic fountain brushes for bus and car washing.

Flour City Brush Co., Minneapolis, Minn., first showing of the "Titan," a rubber block utility brush with nylon bristles, having extremely long wearing qualities.

Laitner Brush Co., Detroit, presented new utility line of "Laco" light duty low price fountain brushes for private car owner and small commercial car operator (uses a light plastic hose.)

Ransom Brush Co., Chicago, first showing of janitor floor brushes, with long-wearing shalon plastic bristles combined with fibre bristles.

Silver Brush Works, Inc., Chicago, first showing of a new fountain type brush for truck washing.

Ox Fibre Brush Co., Inc., Frederick, Md., a new "Warrior" 14-inch floor brush with extreme flair, so brush can get into corners without striking or marring base boards and furniture. Duster to match for professional janitor. "Sparkle" line of brushes with plastic bristles in color.

Arcade Industries, Inc., Chicago, new type mop stick with improved stronger handle at critical point of strain, because no hole is bored in end of stick.

American Standard Mfg. Co., Chicago, first showing of "Dura-Sorb," a new wet mop with high absorbency and high rinsibility, which picks up and releases dirt.

Atlantic Stamping Co., Rochester, N. Y., first showing of new mop tanks in 45, 52 and 60 quart sizes. New wringer pail with three rollers and with casters, in 30 inch size.

W. M. Pettett Co., Tulsa, Okla., new "Big Sweep" dust mop in sizes from eight inches to three feet wide. New household dust mop.

Zelinkoff Co., Wichita, Kans., "Spon-Cham," new mop with du Pont cellulose sponge yarn.

White Mop Wringer Co., Fultonville, N. Y., first showing of new 26-quart mop bucket oval in shape, to allow more space for the mop, and made of stainless steel which permits easy cleaning after use. Also roller wringer buckets with white rubber rolls.

Bobrick Mfg. Corp., Los Angeles, displayed two new low price pushup type soap dispensers. Made first showing of a new display board for use by customers in their offices, or at trade shows, etc.

Franklin Metal Products Co., Chicago, first showing of a new combination towel cabinet and waste receptacle. Also new self-cleaning sand urns, baskets and sanitary receptacles.

Dash Metal Products Co., Brooklyn, N. Y., first showing of new roll towel cabinet with control to limit length of paper extracted. Also a multiple towel cabinet.

Perfo Mat & Rubber Co., New York,

new spike proof matting for country clubs, using self sealing principle developed during war for bullet proofing airplane gas tanks. Also displayed custom built corrugated and perforated rubber mats with inlay of any design or color.

Texas Feathers, Inc., Brownwood, Tex., first showing in Chicago area of turkey feather dusters dyed in various colors.

Paper Container Mfg. Co., Chicago, new collapsible telescopic paper cup dispenser.

Lily-Tulip Cup Corp., New York, first showing of a new 8-cup pull type cup dispenser for hotel bathrooms. Inexpensive, simple and easy to install.

Palmer Fixture Co., Waukesha, Wis., towel and tissue dispensers of corrosion proof metal, and with improved mechanism to control number of sheets withdrawn. Large heavy duty dust pan. Eraser cleaner for schools.

Allied Block Chemicals Co., Pittsburgh, Pa., showed a new "Aer-o-matic" electric deodorizer.

Certified Equipment Co., Cleveland, O., demonstrated a new electric roto brush machine for upholstery shampooing. Also "Dye-a-Spot" kit for covering carpet stains.

Warren Haviland Corp., St. Louis, Mo., showed newly designed window squeegees with rubber in one piece, that are said to give certain operating advantages.

Atlas Products Co., Chicago, showed two new sand urns, with copper and chrome base; new sand sifter; new sanitary napkin disposal unit.

Evaluating Cleaners

(From Page 34)

uct, but simply indicates the rather widely divergent results obtained with different test soilings of the linoleum.

Conclusions

IT is apparent from these data that the panel washability method can be applied both to painted surfaces and to linoleum, provided that adequate care is taken in the preparation of the soiled panels, and that standard detergents are used for comparison purposes. Another requirement is that panels prepared at one time be tested with the standard sample and that a comparative cleaning efficiency term be used rather than the original cleaning efficiency term which fails to correct for panel variation.

The use of statistical methods for comparison is necessary in this type of test because of the rather wide variations encountered.

These methods have been used successfully in the development and evaluation of cleaners, so that there appears to be some degree of correla-

tion between the laboratory test and practical usage.

Dry Cleaning Detergents

(From Page 31)

matter which it carries rather than for the fabric itself. The detergent material used to clean the fabric may be distasteful to the insect, thereby offering further protection in addition to the cleanliness. This is illustrated in Figures II and III for clothes moth larvae.

General Housekeeping

SYNTHETIC organic detergents are used for a host of cleaning purposes. In general dry cleaning plant housekeeping they may be used for the washing of windows, floors, walls, etc. When restaurant or locker room floors and walls are kept clean there is nothing to attract cockroaches. However, the soap or synthetic detergent used must be selected carefully because some of these represent food for cockroaches. Figure IV shows a large white enamel tray, the right hand portion of which was washed with a 0.25 per cent solution of a suitable synthetic organic detergent. The left hand portion of this tray was washed with a 0.25 per cent soap solution. Washing was accomplished by sponging the tray with a cloth squeezed out of the respective solutions and then rinsing by wiping with a cloth squeezed out of fresh water. The edges of the tray were greased to prevent escape of the insects and a colony of healthy cockroaches was introduced into the tray. The tray was placed in a dark room with a camera and flash light attachment mounted over it. The cockroaches were allowed one hour to come to rest, at which time a flash light picture was taken. Their preference for the soap products is well demonstrated.

Synthetic organic detergents have already demonstrated their value in dry cleaning plants and it is generally conceded that they are here to stay. These products, which were once expensive chemical novelties, are now inexpensive chemical necessities. Most plants would find it difficult to operate without them.

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But durability is just one of six big factors that make Inland your best container source for any product! Inland also gives you . . . *full-color lithography* that makes every container a "salesman" . . . the *leak-proof strength* of Inland design . . . a *variety of closures* to meet every need . . . *protective Hi-Baked Linings* for special product problems . . . and selection from a line that is really complete.

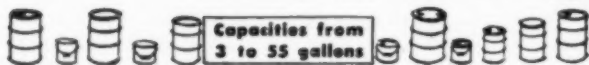
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CSMA Meeting

(From Page 129)

method. ***We believe that less time-consuming methods may eventually be developed to give a reasonably satisfactory analysis. ***There still remains a lot of work to be done in eliminating all possible sources of error in this method and we are not yet ready to give any particulars but will inform all interested parties as soon as we have finished.

"The standardization of allethrin, therefore, will have to wait the adoption of an accurate reproducible analytical method.***"

"The storage requirements for allethrin do not seem particularly strenuous after our experience with pyrethrins. ***We have run a series of tests with pyrethrins and allethrin at comparable concentrations. These results of these tests indicate that at high concentrations, allethrin is somewhat more stable than pyrethrins. Very dilute solutions, such as two per cent solutions, have shown about equal stability.

"In conclusion I would like to say that we feel that the definition of allethrin should mean 100 per cent material or 100 per cent allyl analog of cinerin I. Then, all concentrations of allethrin, whether it be in fly sprays, agricultural dusts or aerosols, could be stated as so many per cent allethrin in the same manner as the labeling of pyrethrin formulations."

In his paper, Dr. Starr pointed out that the evidence which has accumulated indicates that both newborn and adult rats can tolerate allethrin over long periods of time in amounts of about 100 times that which would be encountered by normal insecticide usage. So far there has been no indication that combinations of allethrin with other insecticide materials such as DDT or the synergists, "Isome" or "Sulfox-cide" present any unexpected problems. The most extreme misuse of allethrin aerosol bombs has not killed any of the exposed rats, Dr. Starr concluded.

Data comparing the effectiveness of allethrin with pyrethrins on specific insects were given by Dr. Nash. His results showed that allethrin is almost, but not quite the equivalent of natural pyrethrins against houseflies; at low concentration allethrin is less effective, while at high concentrations it is more effective; 1.0 per cent allethrin resulted in a better 10 minute knockdown figure, and equal or better, 24 hour kill results than the same percentage of pyrethrins in aerosols;

double the concentration of allethrin is required by the direct spray method to equal the knockdown and kill obtained by pyrethrins against German roaches; by the settling mist method allethrin is nearly equal to pyrethrins in terms of knockdown and kill of German roaches at concentrations of .10 and .20 per cent; two to four times as much allethrin in oil sprays to obtain the same kill of American roaches by the direct spray method or the settling mist method; residue from allethrin is superior to that of natural pyrethrins against houseflies.

Household Insecticides

IN a second symposium dealing with new developments in household insecticides, with A. C. Miller of Gulf Research and Development Co., Pittsburgh, as moderator, the following were read:

"Lethane in Aerosols" by J. P. Nichols of Rohm & Haas Co., Philadelphia, which indicated that "Lethane 384" is now under consideration as an ingredient in aerosols, and for use in both industrial and household insecticides; "Lindane Space Sprays and Aerosols" by R. O. Cowin of Standard Oil Co. of Ohio, Cleveland, who stated that lindane has not, as yet, been approved for use in aerosol bombs and that further toxicological work is necessary to determine whether or not it will be safe for this use.

A "Progress Report on the Toxicological Study of Aerosols Containing Chlordane" by Sylvan Witherup of Kettering Foundation, U. of Cincinnati, discussed formulations employed, experimental methods and conclusions of work on toxicity of aerosols containing chlordane, sponsored by Velsicol Corp., Chicago. This was followed by a discussion of the synergist "Sulfox-Cide" by Donald F. Starr of S. B. Penick and Co., New York. He described the product as being of a low order toxicity and not approved by the U. S. Department of Agriculture for use in aerosols. It may be used in household and livestock sprays, however.

The concluding paper of the symposium dealt with "Synergist 264." It was presented by J. B. Moore of McLaughlin Gormley King Co., Minneapolis, the manufacturer. He described the physical and chemical properties of the material, stating that its toxicity is about the same as that of methoxychlor and pyrethrins. It is simple to manufacture and contains no imported raw materials, according to Mr. Moore. It may be used in aerosols at ratios of 5 to 15 to 1 with pyrethrins and allethrin, he stated.

In the June 13 session of the Disinfectant and Sanitizers Division a broad view of public health problems

and the place of sanitation chemicals in public health was presented by Maj. Joel I. Connolly, assistant to the president, Chicago Board of Health. He gave high praise to manufacturers of disinfectants, detergents, soaps and other products for their part in helping to eradicate cholera and other communicable diseases and for providing constantly improved tools for effective sanitation of restaurants, dairies and food processing plants.

"The health department's job," said Maj. Connolly, "is to sell sanitation through education. Yours is to sell sanitary supplies as a means to sanitation. We both have the same objective and we feel that you are working hand in glove with us in the public health field. Tremendous progress has been made in the past few decades and with your help we promise to go on."

In a discussion of "Hypochlorites vs. Quaternaries," Dr. Vladimir Dvorkovitz, director of the Diversey Research Labs., Chicago, asserted that "All tests run on quaternaries fail to demonstrate their superiority over chlorine sanitizers."

It would have been better, he declared, if properties of quaternaries had been investigated more thoroughly before these compounds were placed on the market. All admitted defects of chlorine have been removed, he said, except two, odor and effect on certain materials, and improvements have been made in their limits and deficiencies.

Correct evaluation of quaternaries thus demands comparison with improved chlorine products, he declared. He outlined work done jointly with C. Kenneth Crocker, chief bacteriologist of his company in comparing sodium hypochlorite with a number of quaternaries with consideration of such factors as hardness, temperature and organic matter.

In general, he asserted, the superior advantages of chlorine outweigh any disadvantages. Based on germicidal action, he claimed, the cost of quaternaries is higher than for chlorine.

"The quaternary situation is complex," Dr. Dvorkovitz summed

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up. "Nothing seems to have been developed which shows their superiority to present chlorine products. Better methods of application or ways to get around their defects may be developed. Meanwhile we can be thankful that we can still rely on a proven product—chlorine."

Final paper read at this section's meeting was presented by Dr. Dmitry A. Schiraeff, head, analytical department, General Dyestuff Corp., New York. Among methods developed to deal with problems involving quaternaries, he said, some are too involved to be used by the analytical chemists, while others are "unfortunately not too reliable."

"There is no question," said Dr. Schiraeff, "that there is definite room for a simple and reasonably accurate method of analysis for quaternaries." Continuing, he described investigations conducted to discover some properties or mode of behavior of quaternaries which could serve as a basis for development of analytical procedures for their assay.

Cleaner Evaluation

REPORTING on tests for evaluation of paint and linoleum cleaners, Miss Mary Rose Sullivan of the Monsanto Central Research Labs., Dayton, O., declared that the field of detergent investigation merits more investigation than it has had. This paper appears beginning on page 32 of this issue.

In another paper on "End Use Foam Testing," J. G. Sinsheimer of Fuld Bros., Inc., Baltimore, declared that since there is so much sales interest in foaming power, better methods of analysis should be developed. He discussed various foam formation theories and pointed out that since capacity to foam and stability of foam are different functions, they must be evaluated separately. Procedure was detailed of tests to evaluate foaming power. Among other results, he noted that two scrub soaps, apparently similar, differed widely in foaming power, when run through the test. "We need more data on foaming power," said Mr. Sinsheimer, "and we hope that

the method described may be of assistance."

In a paper on "Recent Developments in Nonionic Surface Active Agents," Dr. J. M. Cross, General Dyestuff Corp., New York, paid special attention to ethylene oxide products, whose water-solubilizing group is a polyoxyethylene ethanol chain. As is the case with all surface active agents, he said, their properties are determined by the balance between the hydrophobic and the hydrophylic groups in the chain.

Solubility behavior, he said, is determined by the length of the polyoxyethylene chain attached to the water insoluble portion of the molecule and by varying this chain length changes are produced in properties of the product. A short chain will give a product which emulsifies in water but does not dissolve. A chain of slightly longer length will give a product which will dissolve in cold water to give a clear solution but will separate out if the solution becomes warm.

He demonstrated how two different products which are equivalent in wetting strength have the same cloud point temperature. This cloud point property, he went on, is very useful, since it makes available an easy method of determining the molecular balance of the product.

These and other reactions, Dr. Cross declared, enhance the future prospects of this class of surface active agents, both within the textile and household industries and in other fields where their unique properties indicate many valuable applications.

Other papers read at the Tuesday morning session included one on "Sulfonation of Alkyl Aryls," by J. E. Kircher, Sharples Chemicals, Inc., Philadelphia, and one on "Optical Bleaches in Household Soaps and Detergents," by Edwin I. Stearns, Calco div., American Cyanamid Co., Bound Brook, N. J.

Gerard R. DeNapoli, Masury-Young Co., Boston, spoke at the Waxes and Floor Finishes Division meeting on the problems involved in developing a floor dressing which would more nearly meet the consum-

er's requirements for a longer wearing, less slippery wax with a higher gloss. He stated that his firm had produced a completely resinous floor dressing which, when tested against several heavy duty wax based products, surpassed all of them in the three qualities mentioned above. The disadvantages of the resinous product were that it was somewhat harder to remove and needed more experience in application in order to avoid ridging and overlapping. In conclusion, Mr. DeNapoli pointed out that the ideal floor dressing had not yet been developed but gave it as his view that when this occurs the resulting product will be completely resinous.

Bernice Cummings, U. S. Testing Laboratory, Hoboken, N. J., read a paper dealing with a new method for measuring the wearing qualities of floor dressing, utilizing radio-active isotopes. She explained that a solution of radio-active cobalt sulphate was dispersed in wax, the resulting mixture was applied to a surface, which was then subjected to wear using weighted shoes mounted on rollers. By measuring the reduction in radio-activity it was possible to determine the amount of wax removed by the rollers. There was keen interest in Miss Cummings' paper and numerous questions were asked from the floor. Some concerned testing and handling technique and others covered the subject of test checking. It developed that several runs had been made with the same floor dressing with comparable results having been obtained in each instance.

Meeting under the chairmanship of B. S. Johnson, Franklin Research Co., Philadelphia, the Waxes and Floor Finishes Division, in the afternoon of June 13, heard B. S. Sodergren, West Disinfecting Co., reporting for the membership committee, state that a list of wax manufacturers had been carefully screened and that names of prospective members had been sent to the CSMA office. Subsequent activity resulted in about 40 new members. The committee suggested to the board that these matters be cleared through the CSMA office to avoid having the same firm solicited

(Turn to Page 157)

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Manufacturers of Wash Tubs, Rubbish Burners, Steel Baskets. Write for descriptive literature.

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Resistant Flies

(From Page 125)

treatment of the larval breeding media; and attempts to find synergists or activators for DDT against DDT-resistant flies.

It has been shown for example, that fly larvae, initially unable to survive in media containing 1 p.p.m. of parathion, are able after 11 generations bred in media containing increasing amounts of parathion, to grow normally in 80 p.p.m. and to produce normal, fertile adults. These adult flies are also significantly resistant to parathion and preliminary studies indicate that they have a type of cholinesterase which is more resistant to inhibition by parathion than that of nonresistant flies.

A recent report (Anonymous, 1950) has indicated that the pyrethrins-synergist, piperonyl cyclonene is effective in increasing the toxicity of DDT to resistant flies. Trials made by applying mixtures of DDT and piperonyl cyclonene to super-Bellflower flies produced only slight indications of increased effectiveness. For example, when applied at 100 micrograms per fly with 10 micrograms of DDT, the mortality of the flies was 50 per cent as compared with 5 per cent with 10 micrograms of DDT alone. One hundred micrograms of piperonyl cyclonene alone caused no mortality. No indications of effective synergism for DDT against DDT-resistant flies were obtained with other pyrethrins-synergists including piperonyl butoxide, N-isobutyl undecylene amide, piperine alkaloid, sesamin, di-n-propyl-2-methyl-6,7-methylenedioxy-1,2,3,4,-hexahydronaphthalene-3,4-dicarboxylate⁴ or N-(2-ethylhexyl)-bicyclo-(2,2,1)-5-heptene-2,3-dicarboximide⁵.

A recent paper by Ranganathan et al. (1949) has suggested that beta-methyl anthraquinone is an effective synergist for DDT. Trials with this compound applied topically or as residual deposits have shown little indication of activity as a DDT-synergist either against nonresistant (laboratory) flies, or DDT-resistant (super-

Bellflower) flies. Tests with a number of other quinones have also been negative. These studies, however, are being continued with the hope of discovering a compound with synergistic value. It is hoped that these and other approaches will aid in the solution of the entire problem of resistance to insecticides, as well as the resistance of house flies.

Control Suggestions

THE following practices are suggested for the present control of house flies:

(1) Practice every possible means of sanitation, especially the disposal of manure and other materials to which flies are attracted, and in which they breed.

(2) Supplement sanitary practices by residual applications of benzene hexachloride and lindane formulations in locations where they are still effective.

(3) Use space sprays or aerosols containing at least 0.1 per cent pyrethrins, or the equivalent of pyrethrins and an activator such as piperonyl butoxide, or at least 2.5 per cent of an organic thiocyanate such as isobornyl thiocyanacetate⁶ or betabutoxy-beta'-thiocyano diethyl ether⁷ in an odorless petroleum distillate. These sprays should be fogged into the air. They are particularly effective in producing a rapid knockdown of the flies, but have almost no residual action. Their use represents, at present, the only satisfactory means for the chemical control of flies resistant to both DDT and benzene hexachloride.

(4) Apply fly-repellent materials such as activated pyrethrum formulations or polypropylene glycols to livestock as required.

(5) Supplement other methods with mechanical and baited fly traps and poisoned attractants.

(6) Mechanically exclude flies from restricted areas with proper screening where practicable.

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⁴ Octactene 264.

⁶ Thanite.

⁷ Lethane 384.

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Trade Marks

(From Page 57)

Co., Rochester, N. Y. Claims use since Jan. 1, 1904.

Davis—This for polish and cleaner for automobile bodies. Filed Jan. 26, 1948 by Western Auto Supply Co., Kansas City, Mo. Claims use since May 8, 1933.

B&A—This for cleaning and polishing preparations. Filed Dec. 8, 1948 by B. Altman & Co., New York. Claims use since 1915.

Childsco—This for liquid wax polish. Filed July 28, 1948 by Childsco Products Co., Macon, Ga. Claims use since May 20, 1948.

B&A—This for soap. Filed Dec. 8, 1948 by B. Altman & Co., New York. Claims use since 1915.

Vitrolene—This for wood floor sealer. Filed July 5, 1947 by Minnesota Paints, Inc., Minneapolis. Claims use since Jan., 1916.

Electrolux—This for non-electric floor polishers and buffers. Filed June 30, 1949 by Electrolux Corp., Dover, Del. Claims use since May 15, 1949.

Aerosols

(From Page 119)

The solubility of methoxychlor and DDT in alkylated naphthalene and of methoxychlor, DDT, lethane and chlordane in "Freon-11" and methylene chloride has been compared.

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Chem. Distributors Meet

A five-day meeting of executives of Southern States Chemical Co., Atlanta, Ga.; Benlo Chemicals, Milwaukee and Eastern Chemicals, Inc., Albany, N. Y., was held recently at St. Simons Island, Ga. Discussed at the meeting were sales promotion methods, new products, competitive problems and the present and future status of the chemical distributor in marketing industrial chemicals.

Johnson Elects Officers

Three new officers were elected June 21 by S. C. Johnson & Son, Racine, Wis. H. F. Croft was named acting general manager to succeed J. J. Babb, who recently was elected president of Lever Brothers Co., New York. R. W. Carlson was elected vice president of sales and Dr. J. V. Steinle was appointed vice president of research and development.

Mr. Croft, who is managing director of S. C. Johnson & Co.'s Canadian affiliate, S. C. Johnson & Son, Ltd., Brantford, Ontario, will retain that post in his new capacity. He has been with the Canadian firm for 30 years.

Mr. Carlson joined the company's sales organization in 1931. He was named Chicago district manager in 1936 and two years later was appointed central regional manager. He joined the company's headquarters as sales manager in 1944 and advanced to general sales manager four years later.

Dr. Steinle joined the organization in 1925 prior to which he was a professor of chemistry at Marquette University.

Gothard Chief Chemist

N. J. Gothard was appointed chief chemist of Sinclair Refining Co., New York, with headquarters in Harvey, Illinois, it was announced June 16th. Mr. Gothard joined the Sinclair organization as a chemist in 1919 and was subsequently appointed assistant chief chemist.

A former president of the Chemical Specialties Manufacturers Association, he has been associated

with Armour & Co., Chicago, and with the Sanitary District of the City of



N. J. GOTHARD

Chicago. He is a native of Dundee, Illinois, and a graduate of the University of Wisconsin.

Elected Zonite Director

R. J. Hahn, secretary-treasurer of Zonite Products, recently was elected to the firm's board of directors to succeed James S. Alexander who has resigned. At the same time, Eric Hartell was elected vice president in charge of advertising.

Washburn Names Broncato

Jacob S. Broncato, emulsion specialist, recently was appointed manager of the Wax Raw Material Division

of T. F. Washburn Co., Chicago. Mr. Broncato formerly was associated with R. M. Hollingshead Corp., Camden, N. J., and until recently was director of technical service of the Warwick Wax Co., Div., Sun Chemical Corp., Long Island City. He will direct service and promotion of waxes and resins manufactured by the Washburn organization.

Larger Aerosol Market Seen

An aerosol market of \$100,000,000 in the near future was predicted recently by Aerosol Development, 60 E. 42nd St., New York, an organization dedicated to the research and development of aerosol products. In an announcement, the development organization stated that individuality and diversification in research on aerosol products will permit the trade to divorce itself from a "standard package" thus promoting growth in many directions.

CSMA Meetings Listed

Chemical Specialties Manufacturers Association has scheduled meetings through 1951, according to an announcement by H. W. Hamilton, secretary. CSMA will hold its annual meeting this year in New York at the Hotel New Yorker on December 3-5, 1950. In 1951, CSMA will meet in Chicago at the Drake Hotel, April 29-May 1 for its mid-year meeting. The 38th annual meeting of the Association will be held in Washington, D. C. on December 2-4, 1951, at the Mayflower Hotel. Tentative plans are already under way for a gala 40th anniversary meeting in December, 1953.

Form Insecticide Corp.

Articles of incorporation were filed recently with the office of the secretary of state, Albany, New York, for Chemical Insecticide Corporation, germicides, disinfectants, and general merchandise. Directors were listed as Gladys M. Bloch, 623 E. 16th St., Brooklyn; J. Stuart Scharf, 187 Beach 133rd St., Belle Harbor, New York; and Louis Klosk, 145 W. 79th St., New York. Capital stock was listed at 200 shares of no par value.

Front Cover

Al Candy, Jr., subject of the front cover photo in this issue, was elected president of the National Sanitary Supply Association at its 27th annual meeting in Chicago recently. Mr. Candy is president of Candy & Co., Chicago, of which his father is chairman of the board. The company was founded in 1891 by Mr. Al Candy, Sr. and his father, and other members of the Candy family.

Leonard B. Schwarcz Dies

Leonard B. Schwarcz, 58, founder and president of Ampion Corp., Long Island City, N. Y., manu-



L. B. SCHWARCZ

facturer and distributor of sanitary chemicals, died June 29 in New Rochelle Hospital.

Prior to the formation of Ampion Corp. in 1939, Mr. Schwarcz had been with Clifton Chemical Co., New York, from 1913 until 1939. He was the author of "Sanitary Products," a book published in 1943 by MacNair-Dorland Co. A second edition of the book is to appear in the near future.

In addition to his wife, Mrs. Harriet Kayser Schwarcz, Mr. Schwarcz leaves his father; two daughters, Beulah and Joan Schwarcz and a brother.

Mr. Schwarcz attended Columbia University and served with the Army in the first World War.

"Flit" in New Package

The 1950 line of "Flit" insecticide products made by Esso Standard Oil Co., New York, is available in a new red-white-and-blue package, it was announced recently. Available in two solutions, one compound containing lindane, the other five per cent DDT, "Flit" is also available in aerosol bombs, containing a larger amount of pyrethrum than previously.

An extensive advertising campaign in support of the line began in mid-June carrying through July and August. Newspapers, national magazine, radio, television and drug, grocery and variety store trade publications

are being used to advertise the line. Further to promote consumer identification of the new packaging, extensive use is being made of point-of-sale merchandising material.

Boyle-Midway Ups Gibbs

Advancement of Perry J. Gibbs from Texas division manager to regional manager was announced recently by Boyle-Midway, Inc., New York. In his new capacity Mr. Gibbs will supervise operations of the company in Texas, Oklahoma, Arkansas, Kansas, Missouri and parts of Illinois, Kentucky and Indiana. The company's regional offices, now located in St. Louis, will be moved to Texas, according to Mr. Gibbs.

R. P. Shadburne has been named to succeed Mr. Gibbs as division manager in Dallas. Mr. Shadburne has been with Boyle-Midway for 14 years.

Develop New Germicide

A newly developed dry germicide "Antibac-25" which is said to release 16 per cent available chlorine in non-alkaline water solutions has been developed and is being made available by Paul Chemical Co., 1122 19th St., NW, Washington 6, D. C. It is said to be the first synthetic organic bactericide that releases un-ionized hypochlorous acid as the germicidal factor. The product has as its active ingredient 1,3 dichloro 5,5 dimethylhydantoin which has a guaranteed minimum of 66 per cent available chlorine.

"Antibac-25" goes into water solution instantaneously at normal working concentrations and there is no need to prepare stock solutions as no sediment results, according to an announcement.

New Miles Antiseptic

Miles Laboratories, Inc., Fort Wayne, Ind., currently is marketing "Bactine," a new product described as a combination antiseptic, germicide, cleanser, and deodorant. It is said to be effective against athlete's foot, itches, rashes, acne, and infectious diseases, and also may be used to destroy bacteria on skin, glass, enamel, and metalware. The product is being recommended for use on hands, dishes, cuts, burns, bites, and skin irritations.

Advance Sternberg

Irving Sternberg was elected to the new office of chairman of the board of Hollywood Shoe Polish, Inc.,



IRVING STERNBERG

Jamaica, N. Y., at a recent meeting of stockholders of the firm. The Hollywood Shoe Polish organization, founded in 1925, markets "Sani-White" white shoe cleaner.

Conduct Adulteration Study

The House of Representatives on June 20th approved a resolution to investigate possible adulteration of foods by chemicals. The resolution calls for a seven-man committee to study the effects of all chemicals and synthetic materials used in the growth, processing and preparation of foods. The Food and Drug Administration hearings, now in recess, cover only the effects of residual insecticides.

Dearborn V.-P. Dies

Edward J. McMahon, vice-president in charge of manufacturing for Dearborn Chemical Co., Chicago, died recently at the age of 51 years.

New Multi-Clean Machine

A new, floor machine weighing 38 pounds including the brush has been added to the floor maintenance equipment manufactured by Multi-Clean Products, Inc., St. Paul, Minn., it was announced recently. The machine, designated "Lite-12," has an overall height of 10 3/8 inches and a brush speed regulated at 175 RPM. Diameter of the brush is 12 inches. The base of the floor machine is coated with a baked on enamel finish over die-cast aluminum.

Confectioners Discuss Sanitation

INSECTICIDES have their place in a confectionery plant sanitation program, Gerald Doolin, sanitation director of the National Confectioners Association, Chicago, declared in an address at the recent decennial conference of the Institute of Food Technologists in Chicago. He insisted, however, that insecticides are not a substitute for a preventive sanitation program. The effectiveness of any insecticide used, he pointed out, will be enhanced by thorough housekeeping practices. Slides were presented showing methods recommended by the confectioners' trade organization to prevent pests of all types from entering a plant and from harboring in structural flaws of the building or in process equipment.

Outlining sanitation practices in the frozen food industry, K. G. Dykstra, laboratory director, Birdseye-Snyder div., General Foods Corp., Al-

bion, N. Y., gave special attention to the organization and training of a specific sanitation or cleanup crew under direction of a first-grade foreman.

"Designing Sanitation Into Food Plants" was subject of a paper by A. T. Waidelich, vice president, Austin Construction Co., Cleveland. He urged full consideration of future sanitation during the planning stage for new construction.

Dr. E. M. Mrak, Univ. of Cal., Berkeley, reported on a survey which indicated that some thirty educational institutions offer courses in food technology, but only one course in food plant sanitation is presented anywhere.

Exhibitors of sanitary chemicals for the food processing plant at the meeting included Oakite Products, Inc., New York; Wyandotte Chemical Corp., Wyandotte, Mich.; Diversey Corp., Chicago; and Sterwin Chemicals, Inc., New York.

Court Rules on Chlordane

By refusing to review the litigation between Julius Hyman, head of the Denver firm bearing his name, and Velsicol Corp., Chicago, the United States Supreme Court on May 29, in effect, granted to Velsicol the exclusive manufacturing rights for chlordane, according to a recent statement of Velsicol Corp. The Court's action, the statement adds, made effective the decree of the Superior Court of Cook County, Ill., affirmed by the Supreme Court of Illinois, enjoining Julius Hyman from using or disclosing or permitting others to use the formulas and processes for making chlordane. The Hyman company is likewise enjoined from making and selling chlordane by decree of the District Court of Denver, which is now in effect, according to Velsicol.

The announcement also revealed that Velsicol Corp. has a suit pending in the District Court of Denver to restrain Julius Hyman & Co., Julius Hyman, and others from making and selling aldrin. The basis of this suit, like that involving chlordane,

is that the formulas and processes relating to aldrin were discovered in the laboratories of Velsicol Corp. and that Julius Hyman and former employees of Velsicol Corp., who are now officers and employees of Julius Hyman & Co., are bound by contract and by confidential relations to assign the inventions to Velsicol Corp.

To Stop Making Chlordane

As a result of the Supreme Court's decision denying Dr. Julius Hyman's petition for a review of the decision of the Illinois State Courts in respect to the ownership of the chlordane patent applications, Julius Hyman & Co., Denver, recently announced that it was discontinuing the manufacture and marketing of technical chlordane.

A company statement says: "Our main attention will now be given to the technical and sales development of aldrin and dieldrin, and to the other products now under investigation by our laboratories . . . aldrin is already in commercial production and is being utilized extensive-

ly this season for the control of cotton insects in this country and for grasshoppers in Canada. Commercial availability of dieldrin is scheduled for this fall, by which time the results of another season's field tests on flies, mosquitoes and many other major pests will have further established the future place of this new chemical in insect control."

Louisiana Labeling Bill

A bill that would require labeling of all poisonous insecticides, rodenticides, fungicides and other economic poisons with the names of the toxic ingredients and giving antidotes was introduced recently in the Louisiana Senate as Bill No. 84. The bill, which was introduced by Senator Frank C. Gipson, would require the registration of such labels with the Louisiana State Board of Health and would fix fees for the registration. It would further authorize the state board of health to make regulations for the enforcement of the provisions of the bill; to provide penalties for the violation of the Act and to repeal all laws in conflict with it. A registration fee of \$2.50 for each separate and distinct registration would be required.

Louisiana now has an Agricultural Poisons Law, passed in 1948, which specifies the type of labeling for such products under the jurisdiction of the state's department of Agriculture. In addition, the Federal Insecticide and Fungicide Law specifies in detail warning and caution statements.

Sameth in New Quarters

Sameth Exterminating Co., located at 200 Fifth Avenue for the past 33 years, announced recently that it has removed its offices, service department and laboratory to new and larger quarters at 157 Chambers St., New York. The firm is occupying the entire 10th floor of the building, where it has double the space of its old quarters.

Nathan N. Sameth, 85-year-old president and founder of the firm, in which he is still active, said that the move was necessitated by greatly increased volume of business.

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New Hysan Catalog

A new 64-page catalog titled "Floor Maintenance and Sanitary Products" currently is being made available to distributors of sanitary and floor maintenance products by Hysan Products Co., 932 W. 38th Pl., Chicago.

New B & M Price List

A price list covering coal-tar emulsifiable disinfectants, disinfectant specialties, pine oil disinfectants, insecticides, weed killers, cresol and cresylic compounds, and other products was issued recently by Baird & McGuire, Inc., Holbrook, Mass.

C. D. Porch to Retire

C. Douglas Porch, president of Kinetic Chemicals, Inc., an affiliate of E. I. du Pont de Nemours & Co., Wilmington, is scheduled to retire July 31st. He has been with the organization for more than 43 years.

At the same time, the du Pont Company announced that operations of Kinetic Chemicals were integrated with the concern's Organic Chemicals Department July 1st.

A new Kinetic Chemicals Division was set up to handle sales of Kinetic products with Robert J. Thompson, as director of sales and Emory M. Fanning as assistant director. The manufacture of "Freon" compounds is in charge of Stuart W. Pratt.

New Bridgeport Aerosol

The introduction of a new low price aerosol insecticide by Bridgeport Brass Co., Bridgeport, Conn., was announced recently by Walter E. Anderson, sales manager of the Aerosol Products Division. The new 79 cent package, which has been fair traded, is being sold through drug, grocery, hardware, variety and retail department stores. A new semi-permanent counter display easel has been developed which is available at no cost to retailers.

Hyman Advances Hall

J. Newton Hall was elected vice president in charge of sales and merchandising of Julius Hyman & Co., Denver, it was announced recently by

the company's board of directors. Mr. Hall has been sales manager of the company since its formation in 1946.



J. NEWTON HALL

Previously he was with the War Production Board in Washington, D. C.

Insecticide Adhesive

An adhesive for use with insecticides was announced recently by Armour & Co., Chicago. It is designed to increase the deposit of the pesticide, and also give it more uniform coverage of foliage.

New Pyrethrum-like Insecticide

The discovery of new insecticidal chemical, extracted from the roots of a weed of the genus *Heliopsis*, and in initial tests said to be more toxic to houseflies than pyrethrum, was announced recently by Avery S. Hoyt, chief of the Bureau of Entomology and Plant Quarantine, U. S. Dept. of Agriculture, Washington, D. C. The discovery of the new chemical, an amide called scabrin, was made by Martin Jacobson, an insecticide chemist of the U.S.D.A.

A number of species of *Heliopsis*, or "ox-eye," as it is commonly referred to, are native to the United States. Three species have been tested for insecticidal potency. Extracts of leaves, stems, bark and roots have been made. The extracts from the roots of one of the species, scabra, appear to contain the most powerful of the insecticides.

Little is known, aside from

New Michigan Quaternary

A new product, "Pestmaster Sanitizer," a quaternary ammonium compound, 10 per cent solution, was announced recently by Michigan Chemical Corp., St. Louis, Mich. It is said to be non-inflammable, non-irritating, odorless, tasteless, non-corrosive and non-toxic. The product is suitable for difficult water problems and is compatible with non-ionic detergents.

GE Deodorant Bulb

A lamp bulb designed to dispel unpleasant odors currently is being introduced by General Electric Co., Schenectady, N. Y. The bulb, less than an inch and a half in diameter, gives off concentrations of ozone to make the presence of odors less perceptible.

New Insecticide Plant

A \$500,000 plant for the manufacture of insecticides and allied products was opened recently in Phoenix, Ariz., by California Spray Chemical Corp., Richmond, Calif. Products manufactured at the new plant are being distributed in Arizona, New Mexico and part of Texas.

chemical properties, of the new material, other than its insecticidal toxicity. Its effect on other insects, man, plants or soils, is still undetermined. Also yet to be known is how the plant can be cultivated, what the difficulties are in obtaining the new chemical from the weed source and how to manufacture it commercially.

The insecticidal properties of pyrethrum are contained in the flowers of the scabra plants, which grow on dry soils and along river banks from Maine to British Columbia and New Mexico. They are hardy herbaceous weeds from 2½ to 4½ feet tall, and are related to the sun flowers, *Helianthus*. The flowers produced in fall months are not very attractive and plants are not cultivated for that reason. Because scabra is a root crop, it might lend itself to mechanical harvesting, which is not possible with pyrethrum flowers.

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Shell Hyman Distributor

Shell Chemical Corp., New York, was appointed recently as exclusive distributor of unformulated aldrin and dieldrin insecticides made by Julius Hyman & Co., Denver.

Market Aldrin, Dieldrin

Aldrin and dieldrin, manufactured by Julius Hyman & Co., Denver, and originally designated Compound 118 and Compound 497, are now in commercial production and distribution of the unformulated products is being handled exclusively by Shell Chemical Corp., New York, it was announced recently by L. V. Steck, vice president of Shell.

Insecticide Firm Files

Articles of incorporation for Anybug Insecticide Corp. were filed with the secretary of state, Albany, N. Y., recently. Capital stock was listed as 200 shares of no par value. Directors are: John A. DeCoursey and Margaret DeCoursey, both of 2820 Bailey Ave., Bronx, and Helen Thornhill, 330 E. 63rd St., New York.

Mass. Quaternary Report

Study of the efficiency of quaternary ammonium germicides for sanitizing food utensils was continued at Massachusetts Agricultural Experiment Station, Amherst, Mass., last year, with special attention to their incompatibility with certain minerals found in water supplies, certain chemicals employed in cleaning agents and organic matter encountered in cleaning procedures. Reporting on progress, Dr. W. S. Mueller says in the station's 1949 review of activities, Bul. 453, that the interference pattern of these, as well as other metallic ions in the action of a quaternary ammonium germicide was investigated.

Continuing, he states: "Valence and pH were found to be the two most important factors determining the interfering power of a cation. Monovalent, divalent and trivalent ions had interfering powers approximately in the ratio of 1:100:10,000 respectively. When adjusted to pH 7, the cations appeared to lose their inactivating ef-

fect. Atomic weight had little or no relation to inactivating power. Five times as much quaternary was required for approximately 100 per cent kill at pH 3 as at pH 10. The work, up to now, indicates that the metallic ions interfere by competing for the cell surface, thus blocking the cation of the germicide."

Elect Kimball Alumni Head

Cyril S. Kimball, vice president of Foster D. Snell, chemical consulting firm of New York, recently was elected president of the Rhode Island State College New York Alumni Association for 1950-51.

Canco Names Two Sls. Mgrs.

The appointment of F. B. Newcomb and J. F. Matteson as assistant managers of sales for its Central and Pacific Divisions, respectively, was announced recently by American Can Co., New York.

Insecticide Exports Off

Exports of insecticides in 1949 were slightly below those of the previous year. Twenty-eight million two hundred ninety-one thousand dollars worth of insecticides were sent abroad in 1949, compared with \$28,622,000 the year before, it was announced recently by the Office of International Trade, U. S. Dept. of Commerce, Washington, D. C. In the first half of 1949 exports totaled \$15,649,000, dropping to \$12,642,000 in the second half.

The dollar shortage, import restrictions, and the increase in construction of foreign plants for insecticide manufacture were attributed as the reasons for the decrease.

Purchases from North, Central American countries totaled \$10,961,000, more than 35 per cent of all exports. Canada was the chief market with purchases of \$4,069,000. South American countries increased purchases last year, displacing Europe as the second largest market. Exports to South America consisted of \$5,548,000.

Exports of DDT accounted for \$4,661,000 of the total, more than any other insecticide.

Johnson Names Three

The appointment of Harold L. Tubman as merchandiser for household waxes and John Rasmussen as assistant household sales promotion manager was announced recently by S. C. Johnson & Son, Racine, Wis. A. D. Malloy, formerly South Bend, Ind., area manager in the Chicago district, was appointed district manager in St. Paul, Minn.

New Hudson Folder

A folder describing the company's new "Nebulizer" hand sprayers, currently is being distributed by H. D. Hudson Manufacturing Co., Chicago. Faster knockdown and greater kills are claimed for the sprayers which feature a four-jet principle.

New Washburn Wax

T. F. Washburn Co., Chicago, has announced a new non-slip safety wax, "Sure Step," which has been under development since November, 1948.

Issues Mildew References

"The Technology of Fungi, Mold and Mildew," a 161-page compilation of technical references prepared by the Philadelphia Quartermaster Laboratories, with special emphasis on studies since 1927, is available at \$4.50 from the Office of Technical Services, U. S. Dept. of Commerce, Washington, D. C. Order PB 100 355.

Chase at Int. Fair

Chase Products Co., Maywood, Ill., has reserved space in the housewares section at the First United States International Trade Fair, to be held in Chicago, Aug. 7 to 19. Under direction of C. W. Svendsen, president, the company's line of aerosols, pressurized products, insecticides and rodenticides, will be presented to buyers from all over the world who will be in attendance. On display at the Fair will be merchandise from over forty countries, ranging from consumer goods to capital equipment and industrial supplies. Exhibits will be arranged in Chicago's four largest halls, Navy Pier, International Amphitheatre, the Coliseum and the Arena.

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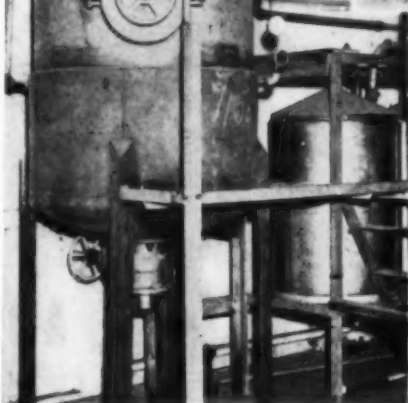
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Merritt V. Eusey, who joined Florasynth Laboratories, Inc., Bronx, N. Y., as general manager of the firm's Pacific Coast operations in 1938, was recently named vice-president of California Chemical Corp., a subsidiary of Florasynth, views of which are shown herewith. At one time, Mr. Eusey headed his own company, which was later sold to Ben Hur Products and he became sales manager and a director.

Toxicity Hearings Resume

The second phase of the hearings on toxicity being conducted by the Food and Drug Administration, Washington, D. C., opened July 10. This second portion of the hearing is expected to take at least two to three months, with testimony relating to toxicity of the major insecticides and fungicides to be covered.

Cushman Innis Speiden V.P.

Donald S. Cushman, formerly assistant to the president was recently appointed vice-president in charge of sales for Innis, Speiden & Co., New York. He has been with the firm since 1928, having been Cleveland manager at one time. In 1942, he was transferred to New York as assistant sales manager, in which capacity he served

until he was appointed assistant to W. H. Sheffield, Jr., president.

He is a member of the Chemists' Club of New York and the Salesmen's Association of the American Chemical Industry.

DONALD S. CUSHMAN



Hercules Toxaphene Plant

A new Hercules Powder Co. plant at Hattiesburg, Miss. to produce toxaphene is to be started shortly and be in production by February, it was announced recently. The new plant is expected to double the company's output of the insecticide.

Lincks Moves to Brooklyn

George H. Lincks, Inc., wax importers and distributors, recently announced the removal of their office to 312 Bridge Street, Brooklyn 1, N. Y. The firm was formerly located at 155 John St., New York.

New Levernier Dispensers

New model foot-pedal soap and alcohol dispensers for hospital use, including what is claimed to be the first gold plated dispenser on record, are

offered by The Levernier Laboratories, Inc., Syracuse, Ind., in a folder put out by Martin W. Levernier, president of the firm. The new dispenser designs include single and double foot-pedal types in stainless steel and chrome plated. Either model is available in over-all gold plate at an extra cost of ten dollars. Jars for liquids are two-quart capacity on both double and single models. All types are covered by his original U. S. Patent No. 1,949,315, according to Mr. Levernier. Copies of the folder are available directly from the company.

A. Steis of Lien Dies

Albert Steis, who directed the manufacturing operations of Lien Chemical Co., Chicago, since 1939, died recently after a long illness.

Isco Aerosol Guide

The 1950 edition of "Iscomist Aerosol Guide for Greenhouses" was published recently by the insecticide division of Innis, Speiden & Co., New York. The guide, in the form of a reference chart, gives information on the use of greenhouse aerosol bomb formulations, plus a table of recommendations for control of greenhouse insects. Copies are available by writing the company at 117 Liberty St., New York 6.

New Polishes Book

(From Page 77)

product and the processes involved in their manufacture. Simple analytical tests identifying the properties of waxes are described in the text to indicate the various means of detecting gross adulterations. The appendix includes tables, conversion factors, and wax specifications.

The text is designed to help the practical man select raw materials in formulating polishes. To this end, the first section of 50 pages is concerned with the properties, characteristics, manufacture, etc., of materials such as waxes, solvents, and emulsifying agents. The second section of 100 pages covers the manufacturing processes, describing the apparatus used, and indicating several typical formulas for the various polishes.

Pennsalt Detroit Office

Pennsylvania Salt Manufacturing Co., Philadelphia, recently announced the opening of a new Detroit sales office at 535 Griswold St. Harry G. Potts, district sales manager of the company's heavy chemicals department is in charge. With the opening of the new Detroit office, Pennsalt is discontinuing its former sales office at its Wyandotte plant.

Para for Mold Control

Tests recently completed by Monsanto Chemical Co., St. Louis, and just announced by Roland S. Shumard, in charge of the company's industrial preservative group, indicate that para-dichlorobenzene is effective in controlling mold or mildew growth. The tests indicated that para controls molds commonly found on household objects, provided a saturated atmosphere is maintained in the storage compartment. The product is used in essentially the same manner as for moth-proofing.

Near Perfect Filter Seen

New filters which may make possible completely dust-free conditions in industrial operations, for the first time at reasonable cost, have been developed by Arthur D. Little, Inc., Cambridge, Mass. The filters, which were worked out for the Atomic Energy Commission by the Little organization, are discussed in the May, 1950 issue of the firm's *Industrial Bulletin*.

The filters are not yet available for private use, but arrangements are being proposed to manufacture them commercially, and it is expected they will be available through regular channels. According to the *Bulletin*, good conventional methods of air cleaning will pass 1000 to 3000 of the 20,000 particles of dirt per cubic inch in ordinary atmosphere, while the new filter will, on the average, let by only a single particle.

The filter medium itself is a special soft and felt-like paper containing sub-microscopic asbestos fibers which direct the air through such tortuous paths that essentially all of the particles become entangled in the fibers. Large sheets of this paper are

folded, collapsed in accordion fashion, and fitted into a wooden frame. By this means, large areas of filtering surface can be held in a relatively small wooden frame. Single filter units can be built to handle 1000 cubic feet of air per minute at pressures well within the capacity of ordinary blowers. The paper is set into the frame with a heavy plastic cement and the corners of the frames are screwed and cemented. To preserve the effectiveness of the filters, no leak whatever can be tolerated in the frame or its mounting into the ventilating duct.

Floor Machine Folder

Breuer Electric Mfg. Co., Chicago, is mailing a folder describing the "Tornado 6000 Series" of all-purpose floor machines.

Wax Rules Hearing

A meeting of the original committee on trade practice rules for the floor wax industry with representatives of the Federal Trade Commission has been called for some time in September, in Washington, it was learned recently. Proposed trade practice rules for the floor wax industry were released June 22, 1949, but it is understood that as a result of the reorganization of the F. T. C. and issuance of the General Service Administration's new specification for floor waxes and the establishment of the A. S. T. M.'s committee on wax polishes the rules are to be given further consideration.

A meeting of the industry committee of the Waxes and Floor Finishes Division of the Chemical Specialties Manufacturers Association is scheduled to be held in New York, July 11, according to Melvin Fuld, Fuld Brothers, Inc., Baltimore, chairman.

New Rabbit Repellent

A new rabbit repellent, called "No-Nib '1," has been introduced commercially by B. F. Goodrich Chemical Co., Cleveland, it was announced recently. The new chemical formulation is packaged in powdered form in six ounce cans. It can be dusted on vegetable plants and flowers or can be mixed with water and used as a spray. "No-Nib '1" was tested at the Florida Agricultural Experiment Station.

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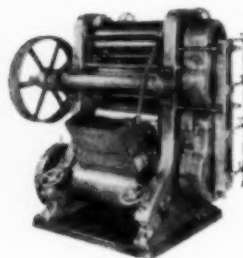
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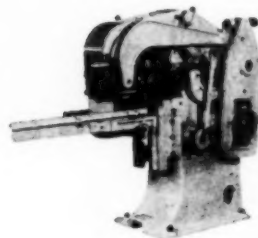


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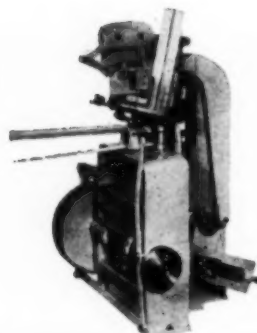


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Wanted—Chemist with doctor's degree. Prefer man with experience in wax emulsions, soaps, insecticides and disinfectants. Good salary. Location of factory in Midwest. Write, stating complete details. Address Box 209, c/o *Soap*.

Soapmaker Wanted by old established firm in Pacific Northwest. Must have references. Position steady. Address Box 210, c/o *Soap*.

Chemist Wanted: Thoroughly experienced formulation, application, alkali cleaners, detergents. Also field service. Full information, salary expected, first letter. Address Box 211, c/o *Soap*.

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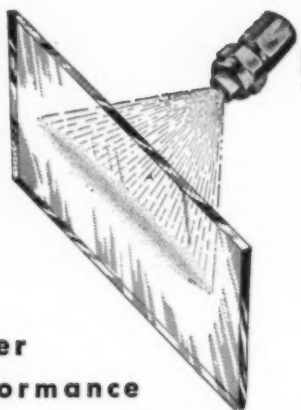
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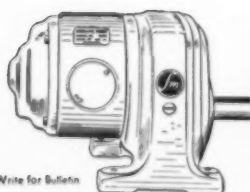
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Wanted: 500 to 600 gallon double spiral ribbon mixer. Jacketed for 25# pressure. Suitable for making stiff pastes. End or bottom gate discharge, gear or chain drive, welded construction. Address Box 224, c/o Soap.

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CSMA Meeting

(From Page 137)

by two or more divisions.

Chairman Johnson reported for Mal Flannagan's (Federal Varnish Co., Chicago) marketing committee, advising that it had not been possible to properly organize the work of this group until the current session and that a full report would be made in December. In reporting for G. S. McNerney's (Boyle-Midway, Inc., New York) legislative committee, Mr. Johnson noted that the Federal Trade Commission was again becoming active in wax matters and that a meeting had been scheduled for Sept. 12, in Washington. The original wax industry committee, as appointed by the FTC, all of whose members are now in the CSMA excepting the Paint,

Varnish & Lacquer Association members, will be prepared for the September conference. In addition, Mr. Johnson, reporting for the administration committee, stated that a meeting had been held at which considerable accumulated business had been cleared up. It was suggested that the wax division expand to a three day meeting in December, that this same program be followed by the convention as a whole and that the program be re-arranged to permit attendance at as many meetings as possible by those interested in two or more divisions. However, the wax division will meet for three days in December, regardless of board action on the entire program.

C. S. Kimball, chairman of the Wax and Floor Finishes scientific committee, then took over as presiding officer. He reported that the CSMA board had voted the wax division \$500 to defray the cost of setting up the Official Test Linoleum program, to be conducted in a manner similar to that used for the Official Test Insecticide. It was voted to recommend to the board that the association's 1943 wax specification be withdrawn as obsolete and that a new spec be drawn to supplement others in existence but to be designed primarily for use by small wax buyers. Dr. R. B. Trusler, Davies-Young Soap Co., Dayton, was appointed chairman of a sub-committee to consider such a specification.

Sub-committees were set up to deal with several other problems. The OTI committee will continue to function under Mr. Kimball. A. E. Butner, S. C. Johnson Co., Racine, Wis., will continue the work of his sub-committee on developing a specification for aerosol wax solutions and a new committee is to be appointed to work on tests to determine the best methods for wax application. Mr. Butner's group reported that the proposed specification for aerosol solutions was premature and that if one is to be written at this time it should be general. There was considerable discussion of the results obtained from the round robin series of tests for gloss, using various methods of application. It was agreed that the so-called

CSMA test should be revised and the sub-committee dealing with this problem was instructed to consider a new test as part of the program.

IN the closing business session of the aerosol division, Tuesday afternoon, a sub-committee of the scientific committee reported on the New York fire department situation relative to regulation of aerosols. After polling the membership and exploring the subject, the subcommittee's conclusion was that the fire department cup test of aerosols is incomplete and unsatisfactory. Thus the task before the committee is to modify or otherwise devise a mutually satisfactory and duplicate test procedure. This, it is hoped, may be ready in two or three months.

A 47-page report has been compiled on regulations affecting the aerosol industry and section members were informed that it will be available in about a month. A check list of aerosol products has been prepared and will be printed for distribution.

Following report of the accident committee, a proposal was made to discharge the committee on the ground that there have been very few accidents in use of aerosols and that this fact should be publicized. It was argued, however, that the accident committee has not yet had time to prove its worth. Since similar accidents have occurred more than once, the committee should have full opportunity to study the causes. Thereby, this study of safety may prove to be one of the most valuable services the scientific committee can offer, it was agreed.

Warfarin Generic Name

"Warfarin" has been adopted by various government agencies as the coined generic name for the anticoagulant rodenticide "W.A.R.F.-42," it was announced recently.

Acme Sponges Found

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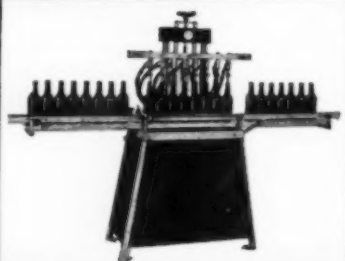
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Simple as ABC...

HE principles of good advertising coverage are as simple as ABC in spite of innumerable efforts to make them appear complex, involved and mysterious. If you want to sell to plumbers, you call on plumbers, not on milliners, shoemakers or professional pretzel benders. If you want your advertising to be read by plumbers, advertise specifically where plumbers read,—and **not** where they comprise only 1 or 2 per cent of total circulation. Simple, direct and sensible!

Now, if it happens to be in the field of soap and detergent products, insecticides, disinfectants, floor products, and other chemical specialties where you want your advertising **specifically** to be seen and read, the direct, sensible and economical approach is through the advertising pages of **the one** magazine really read in this field, which is

SOAP and Sanitary Chemicals

254 WEST 31st STREET

NEW YORK

Tale Ends

ON August 1, the old Kirkman plant of C-P-P in Brooklyn will shut down, something of a victim of the inexorable march of science in the soap industry. For some time, C-P-P has been transferring Brooklyn operations to its other plants in line with the development of new, modern soap and detergent products. With nostalgic memories, we harken back to the days when Kirkman & Son were one of the nation's largest producers of yellow bar laundry soap—and fear that the days of this once dominant soap may be numbered.

Leading manufacturers of sanitary chemicals, waxes, soaps, and other chemical specialties are gradually eliminating the return of steel shipping drums. It seems the cost of return and processing for re-use is higher than the cost of the drum—and new drums can now be had in plenty. Could it be that ten years of returned-drum headaches for manufacturers might be drawing to a close?

Apparently the battle for the synthetic detergent household market in Jolly Old England continues apace. A recent survey showed two-thirds of British housewives use synthetics, but half of these said they would return to soap use if it were off ration and freely available. So, there is likely to be a real hub-bub for some time in the English soap market.

For the first time in many a year, the National Sanitary Supply Assn. will meet outside of Chicago in 1951. The scene of the 28th annual convention and merchandise exhibit next year will be Cleveland, June 3-6, with headquarters at the Hollenden Hotel. In 1952, NSSA will return to Chicago and meet at the Stevens Hotel in March.

Sixty years ago when he was about thirty, Samuel Fels applied for an insurance policy but was rejected as a poor risk for health reasons. He died last month at the age of ninety, probably the oldest man still active in the soap industry. Whatever it was that the well-known Philadelphia soaper had back in the gay nineties when the insurance doctors turned him down, more of us should have today.

At the recent meeting of the Manufacturing Chemists Assn. and the Synthetic Organic Chemical Manufacturers Assn. at Spring Lake, N. J., the greatest concentration of chemical industry "top brass" in history was noted, about 425 of them all told. A golf tournament requiring two courses was staged by Monsanto's Vic Williams—200 players in one of the best tournaments ever.

Automatic clothes washing machines,—the quarter-in-the-slot type in a store on Leichtensteinstrasse,—have taken Vienna by storm and threaten to become something of a diplomatic "incident." Russia says they are another sample of American "colonialism."



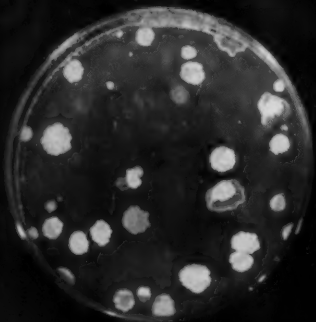
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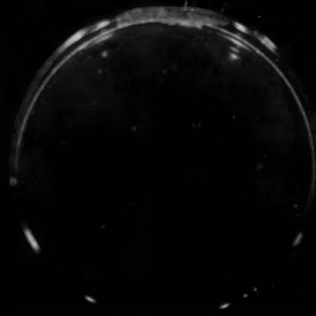


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